THE IMPACT OF SELECTED FINANCIAL REPORTING PRACTICES AND THE NATURE OF THE AUDIT OPINION UPON MUNICIPAL INTEREST COST AND BOND RATING

By
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The objective of this research effort is to examine the impact of selected financial reporting variables and the nature of the audit opinion upon net interest cost (NIC) to municipalities and their bond rating (BR). Due to the variety of reporting practices in the public sector far exceeding that in the more standardized corporate area, an opportunity is provided to observe the impact of alternative reporting practices. The presence of audited financial statements, the type of auditor, the type of opinion expressed, the accounting methods applied, the conditioning factors of deficits and bond type, the existence of other experts, and special reports issued by independent Certified Public Accountants (CPAs) in private practice and by members of the auditor general staff (state auditors) represent the variable list to be tested.

The following three research approaches are applied: an investigation of the plausibility of audit and financial reporting effects in the municipal bond market via interviews; a questionnaire distributed to underwriters and investment bankers, attorneys, CPAs, educators, municipal finance officers, bond raters, members of the National Council on Governmental Accounting (NCGA); and an empirical statistical analysis of all general obligation municipal bonds and utility revenue bonds issued in Florida for 1974, 1975, and 1976. The purpose of applying three research approaches is to obtain validation of the research results.

The study results support (1) that an audit has a favorable impact on NIC (a decrease in NIC) and BR (an increase in BR), (2) audit assurance attracts more bidders, (3) the impact of an audit is lessened if the audit opinion is qualified, (4) a "Big 8" audit has a more favorable impact than an audit by other CPAs in private practice, (5) audits by CPAs in private practice will have a more favorable impact than audits by state auditors, (6) the larger the proportion of a fund "covered" by an accounting method in accordance with Governmental Accounting, Auditing, and Financial Reporting (GAAFR) the more favorable will be NIC and BR, (7) the impact of an audit on NIC and BR is greater for those municipalities with deficits in the general fund, and (8) a special report from an accountant (e.g. pertaining to the mathematical accuracy of debt service) will have a favorable impact on the NIC

and BR. There is very limited support for a differential impact of reporting practices on revenue versus general obligation bond issues and for a favorable impact of holding the Municipal Finance Officers Association Certificate of Conformance.

It appears that a means of improving a municipality's net interest cost and bond rating is available through improving financial reporting and audit practices. The measurement of differing perceptions on determinants of net interest cost and bond ratings and important facets of the municipal bond market allows groups to assess the optimality of past and current accounting and audit practices, the propriety of their beliefs concerning other professional groups' preferences in the reporting area, and desired future actions based on the cost/benefit dimensions clarified by the research effort. When the benefits of adequate financial reporting practices and an audit are suggested with quantification, it would appear reasonable that voluntary compliance with proposed SEC-level disclosures could be encouraged and obtained without the related cost of regulation.

CHAPTER I
PROBLEM STATEMENT

Municipal bonds are a major source of funds for cities, counties, and other local government units in the United States. State and local governments have grown significantly (State, 1968); "from 1955 to 1974, the cost of services, excluding welfare payments, . . . increased to $191.6 billion from $30.6 billion" (Arthur Andersen, 1976, p. 4). A significant amount of this money has to be financed by borrowing in the municipal securities market--the Bond Buyer, daily paper for the trade, indicates $13.4 billion of new bonds were sold in 1967 (Petersen, 1974), and by 1974 annual new sales of long-term and short-term municipal debt exceeded $50 billion (Sherwood, 1976). In the first eight months of 1977, $30.8 billion long-term municipal securities were issued.

The interest cost (i.e. interest rate) associated with these bonds is an important component of the cost of operating local government. Efforts by municipal finance officers, governments, and the general public (National Committee, 1968) to either predict or lower this significant cost element might yield more successful results if the decision maker were provided empirical evidence concerning the impact of financial reporting

practices on net interest cost. Information on these plausible interest determinants could also prove useful to investment bankers, underwriters, bond rating services, and investors in their attempts to advise municipalities or predict and influence net interest cost. Due to the variety of reporting practices in the public sector far exceeding that in the more standardized corporate area, studies of the public sector may expand opportunities to observe the impact of alternative reporting practices.

A substantial body of research exists in the finance literature which explains some of the determinants of interest cost paid by individual state and local governments on their new long-term bond issues. This finance literature súggests that interest may be a function of issue size, the number of bids submitted, the market rate of interest at the time of sale, the final (or average) maturity of the issue, whether the issue is general obligation or revenue bonds, whether a call provision is included, overall debt/true value of property, default history, economic stability, and economic diversification (Jantscher, 1970; Hastie, 1972; Kidwell, 1977; Kidwell and Hendershott, 1977; Kessel, 1971; Carleton and Lerner, 1969). However, the potential role of financial reporting variables as determinants of net interest cost has been largely ignored.

The objective of this research effort is to examine the impact of selected financial reporting variables and the nature

of the audit opinion upon interest cost and bond rating. The presence of audited financial statements, the type of auditor, the type of opinion expressed, the accounting methods applied, the conditioning factors of deficits and bond type, the existence of other experts, and special reports issued by independent Certified Public Accountants (CPAs) in private practice and by members of the auditor general staff (state auditors) represent the variable list to be tested.

This paper is comprised of nine major chapters. An introduction to the problem and the rationale for examining both bond ratings and interest cost are provided in this chapter. Chapter II describes the value of information and the audit function. Note that the Appendix defines terminology that serves as a basis for the literature review presented in Chapter III and the formulation of hypotheses in Chapter IV. Chapters V through VII develop the sample designs and research methodologies and present empirical findings. Chapters V and VI report the results of survey methods employed. Chapter V reports on interviews conducted while Chapter VI analyzes questionnaire data. Chapter VII describes the analysis of data gathered from financial reports, official statements, and published sources. Chapter VIII integrates the findings of the three phases of the research effort. Chapter IX suggests possible extensions of the research. The primary expected contributions of the study are delineated in Chapter IX.

The Rationale for Examining Both Bond Ratings and Interest Cost

Bond ratings and interest cost are both subjects of examination. Bond ratings are examined because conventional wisdom maintains that adequate disclosure and audits do affect bond ratings. Even if this is the case, the municipality does not benefit unless such disclosure practices result in reduced interest cost. Thus, interest cost is relevant.

Results of a number of studies quantifying municipal bond interest cost differentials between rating classes in basis points (i.e. hundredths of a percentage point) are provided in Table 1 (the dates correspond to the date of publication of references included in the bibliography which would provide details concerning the studies). These studies and the research of Jantscher (1970) indicate that despite a contraction of the differentials or the effect of business cycles over time (Van Horne, 1970), the bond rating and the interest cost do on average vary together. There is, however, an overlap between bond rating groups in the interest rates; each rating category includes a sizeable range of interest costs. The distribution of each interest cost given a bond rating overlaps with the distribution of each interest cost given the next level bond rating. A bond with an Aaa rating may have a higher interest cost than an Aa bond. This presents the possibility of a difference in the bond rating which is not accompanied by a similar (in direction) difference in interest cost. Hence both warrant investigation.

Table 1
Municipal Bond Interest Cost Differentials Between Rating Classes as Measured by Other Researchers in Basis Points

	Morris (1958)[a]	Robinson (1960)[a]	Phelps (1961)[a]	Heins (1963)[a]	Federal Reserve (1967)[a]	Kessel (1968)[a]
Aaa-Aa	25	17	21	14		13
Aa-A	29	34	33	24	14	-1
A-Baa	48	45	33		21	17

Source: Jantscher, 1970, p. 6.
Note: [a]The entries on the table record differences between the net interest costs of bonds in adjoining rating classes. The ratings are those of Moody's. The Differences are expressed in basis points, i.e. hundredths of a percentage point. (Robinson's and Kessel's studies measure the differences in yields, and Kessel utilizes Standard & Poor's ratings.)

> Bond ratings influence in the aggregate hundreds of millions of dollars of interest expenses each year to governmental borrowers. . . . Several empirical studies have tried to determine the factors influencing interest rates on municipal bonds. All have found ratings to be the best explanation once the general level of interest rates and the maturity of the bond are held constant. (Petersen, 1974, pp. 2, 34)

The importance of the relationship of bond rating and interest cost has been quantified by Petersen (1974, p. 5).

> Each step down (in bond rating) has involved an additional 10 to 30 one-hundredths of a percentage point in interest cost. This is equal to $10,000 to $30,000 in added interest expense annually on every $10 million borrowed. That differential is not set by the agencies; it is a product of market forces.

Although bond ratings and net interest cost are negatively related and tend to move almost concurrently, the lack of continuous variability of bond ratings (Kessel, 1971) coupled

with the aforementioned overlap of interest rates, necessitate the examination of interest rates as a dependent variable. In light of institutional requirements that investments be limited to securities with high bond ratings and bond rater actions of withdrawing ratings in situations where disclosure is deemed inadequate, it is necessary to examine the impact of accounting and audit variables upon bond ratings, measures of real consequence to security issuers. Interest measures provide a sensitive measurement device for evaluating the impact of financial reporting, while ratings provide a widely used measure of bond quality which at times conflicts with the numerical ranking of interest cost.

The author recognizes that interest cost is affected by many variables and thus is difficult to study. Other ways of measuring the impact of an audit and other financial reporting practices include the ease of issuance, timeliness of the issue, marketability (regional versus national), voter approval of bond issues (Rabinowitz, 1969) and the number of bids attracted. Thus while this study will focus on net interest cost and bond rating as measures of the financial reporting impact, it can be extended to study other areas of potential impact. The reason for initially distinguishing between audit practices and financial reporting is to recognize that the audit report is the report of a third party while the financial statements are generated by the municipal entity. However, throughout

the paper the term financial reporting practices is intended to encompass the audit report.

Financial reporting by municipalities is currently receiving much attention from the investment community (Klapper, 1977a) and from the cities themselves.[1] Expanded disclosure (Coopers and Lybrand, 1976), uniform methods of accounting (Arthur Andersen, 1976), and the conduct of audits (National Committee, 1968) are all being discussed. A revised municipal securities disclosure bill has been reintroduced by Senator Harrison A. Williams (Bill S.2339) and is aimed at regulating issuers of municipal securities (The CPA, 1977).

> Underwriters, the middlemen who buy bond issues and resell them to institutional and other investors, are forcing state and local governments to disclose all kinds of elementary information they haven't had to disclose before. . . .
>
> Ever since New York City's fiscal crisis came to light in early 1975, Washington has been pondering ways to make local governments disclose to investors, in readily usable form, the same sort of information whose availability is taken for granted by buyers of corporate stocks and bonds. Last year local governments helped to defeat a bill in Congress that would have tightened federal controls over municipal bond offerings and widened disclosure to investors. . . .
>
> Some municipalities have resisted the new requirements, at least for a while. . . . (but)
>
> The few municipalities that won't or can't meet all the new disclosure requirements find they sometimes pay a steep price. (Klapper, 1977b, pp. 1, 23)

Municipalities' attitudes concerning reporting practices might be affected by empirical evidence on the impact of these

practices on interest cost and bond ratings. Similarly such evidence would facilitate evaluation of recommendations such as the imposition of Securities and Exchange (SEC) registration requirements and annual audits of municipalities (see the recently defeated legislation proposed by Senators Harrison A. Williams of New Jersey and John Tower of Texas: The Municipal Securities Full Disclosure Act of 1976 (S.2969), in addition to the new bill cited earlier). Senator Thomas Eagleton has also been active in promoting the removal of the 1933 Act (SEC) exemption presently allowed to municipal securities (Sommer, 1975) and has claimed that mandatory audits would have the impact described below.

> The many well-run states and communities could more easily demonstrate their soundness and the deservedness of their high credit ratings and low interest rates. At the same time, any bond issuer which was manipulating figures to show a balanced budget would be exposed. Good issues could be more easily differentiated from bad issues, and financially responsible units of government might then see their prudence rewarded by lower interest rates and more competitive bidding. (U.S. Senate, 1976, pp. 15-16)

Mandatory audits will be conducted for all municipalities receiving at least $25,000 in federal revenue-sharing funds according to a new provision in the federal revenue-sharing program; municipalities are expected to meet this requirement in three years (Lynch, 1977).

Assessment of the impact of an audit and various financial reporting practices on net interest cost would indicate the

market valuation of alternative practices. It has been suggested that preferences for different information structures can be revealed through investors' shifts between investments as well as direct bids for information (i.e. an active search process) (Lev, 1977). Marketability measures will be examined. While the desirability of specific practices cannot be directly evaluated from market data (Beaver and Demski, 1974) due to the absence of a comprehensive examination of alternatives (Beaver and Dukes, 1972) and the "free rider problem" (nonexcludability property of public goods) (Gonedes and Dopuch, 1974), analysis of the impact of specific practices can assist policy makers (May and Sundem, 1976).

In light of the wide discussion of financial reporting attributes as possible determinants of net interest cost, there is a need for formal study of their influence on bond ratings and interest rates.

Notes

1. A National Alliance of Financially Responsible Local Governments was organized on November 14, 1975, to establish 15 financial responsibility rules and to demonstrate fiscal responsibility as a means of regaining investor confidence and lowering interest rates to cities.

CHAPTER II
THE VALUE OF INFORMATION WITH EMPHASIS ON THE AUDIT FUNCTION

A basic premise of this study is that financial information, particularly the audit function, has value. This information can be viewed as a commodity the possession of which yields greater profits. Related costs of generating and transmitting information must be considered in assessing the net value of the commodity.

Information Value

An extensive body of literature has evolved concerning the value of information, its characteristics as a commodity, and its related costs; particular emphasis has been placed on the impact of regulation, since information has been the focal point of regulatory activities by such government bodies as the SEC, the Federal Trade Commission (FTC), and numerous state agencies. Important literature will be referenced to provide a foundation for the present analysis of the impact of financial reporting practices on bond ratings and net interest cost. Arrow (1962), Grossman and Stiglitz (1976), Hakansson (1976), Benston (1976a and 1976b), and Manne and Solomon (1974) discuss information as a commodity, its related characteristics, and information distribution problems.

The regulation controversy is evident in articles by Coase (1960), Garrett (1974), Wilson (1974), Posner (1974), Schwert (1977), Manne and Solomon (1974), Stigler (1964), Friend and Herman (1964), Rappaport (1976), and Benston (1977); this body of literature clearly identifies the potential cost of regulation. Examination of the information and regulation literature uncovers a key issue concerning whether information is a public good.

The doctrine of "public goods" (Alchian and Allen, 1972) defines a category of economic goods that can be consumed or enjoyed by one individual without diminishing the simultaneous or subsequent enjoyment of the same economic good by others (Manne and Solomon, 1974). It is clear to the author that accounting information does not meet the definition of a pure public good (see Milne and Watts, 1977, for a presentation of a proof that information is not a public good) when differences in the timing of the receipt of information are considered. Therefore, the propriety of regulation is not evident from an economic perspective. There are costs related to regulation and there are externalities in the production of information (including accounting information) and these warrant consideration by policy makers addressing the regulation issue. Since a cost-benefit trade-off exists, the need for regulation is not automatic, and research on the benefits of voluntarily contracting for independent audits may lead to achievement of desired disclosure and audit

levels without incurring the related costs of regulation. Such research will also provide policy makers with empirical information concerning the value of the service being mandated.

The recent provision in the federal revenue-sharing program which was described earlier may preclude studies of this nature involving larger municipalities in future years. There is currently an opportunity to quantify the impact of varied financial reporting practices in the municipal area which may provide insight into reporting and regulation practices in the corporate sector (despite some differences in the incentives of the parties related to each market (Zimmerman, 1977) and the greater role of state authorities in the municipal sector (Sommer, 1975)).

Before addressing the value of accounting information and the audit function, the key premise that information has value warrants consideration. Numerous papers suggest that specific uses of information serve as a means of judging information value.

Fama and Laffer (1971) cite the following three major uses of information: (1) reduction of risk, (2) improvement of decision making, and (3) returns to traders. An investor in corporate or municipal securities can be viewed as bearing two distinct risks, (1) an information risk and (2) a business risk. Both misinformation and the lack of information would contribute to this first source of uncertainty. Numerous empirical studies (Levy and Sarnat, 1972) have presented evidence

that investors tend to be risk averse; these investors will pay a risk premium to lower uncertainty. The well established concept that a trade-off exists between risk and return in itself recognizes that the lowering of risk has value.

Regarding Fama and Laffer's (1971) second major use of information, the development of management accounting represents the recognition of the usefulness of financial data in improving decision making. Likewise capital budgeting analysis, inventory models, and break-even analysis as a basis for production and pricing decisions, all utilize financial data and are extensively promoted in the finance literature. Extensive use of accounting information is also evident in bank and other creditors' lending decisions, mergers and acquisitions, utility regulation, labor negotiations, and incentive plans. The improvement of decision processes such as loan examination and evaluation (Orgler, 1975) and the auditor's judgment on firm viability (Altman and McGough, 1974) via models based on financial data have been suggested and tested in the literature.

Regarding the usefulness of information in earning returns to traders (Fama and Laffer's (1971) third use), Collins (1975) provides empirical evidence on the nature of superior information. He demonstrates that unpublished but available financial results by business segments lead to improved forecasting and better trading rules. Similarly, methodologies comparing forecasts to prices of securities as a means of measuring the capture of

returns from trading on information, if obtained before the market, have been utilized by Benston (1973), Ball and Brown (1968), and numerous other researchers in both accounting and finance. The point being made is that if information obtained before the market (particularly by insiders) leads to abnormal returns, there is a suggestion that information has value, although based on the efficient markets evidence, no trader returns would be expected when the information is publicly available.

It is evident that information is accepted to be of value in decision making and investing. The fact that information has been and is voluntarily and rather widely provided prior to enactment of regulation (e.g. practically all New York Stock Exchange (NYSE) firms reported annual income prior to the 1934 Securities Act; many firms incorporated segment reports; and currently firms release earnings forecasts without regulation) in attempts to attract investors is evidence of information value (assuming firms are stockholder utility maximizers and recognizing the qualification that Arrow's Impossibility Theorem states that it is impossible to design optimal group information systems).

The Value of Accounting Information

Although the value of information in general has been discussed with a few specific examples of studies involving financial data, the usefulness of accounting information in particular should be discussed. The usefulness is suggested in the literature through expressions of the objectives of accounting.

> Accounting is a measurement and communication system to provide economic and social information about an identifiable entity to permit users to make informed judgments and decisions leading to an optimum allocation of resources and accomplishments of the organization's objectives. (Langenderfer, 1974, p. 49)

> The objectives of accounting are to provide information for the following purposes:
> 1. Making decisions concerning the use of limited resources, including the identification of objectives and goals.
> 2. Effectively directing and controlling an organization's human and material resources.
> 3. Maintaining and reporting on the custodianship of resources.
> 4. Facilitating social functions and control. (A Statement of Basic Accounting Theory, 1966, p. 4)

> . . . governmental accounting exists for the purpose of providing complete and accurate financial information, in proper form and on a timely basis, to the several groups of persons responsible for, and concerned with, the operations of governmental units and agencies. (National Committee on Governmental Accounting, 1968, p. 1)

> An objective of financial statements for governmental and not-for-profit organizations is to provide information useful for evaluating the effectiveness of the management

> of resources in achieving the organization's goals. Performance measures should be quantified in terms of identified goals. (American Institute of CPAs, Study Group on the Objectives of Financial Statements, 1974, p. 66)

Accounting information is seen as a commodity of value because (1) decision makers are concerned with costs and benefits, (2) performance can be evaluated in terms of goal achievement, (3) disclosure is a means of fulfilling the accountability of management, and (4) both past and current performance are of interest to decision makers (Chan and McKeown, 1976). The conceptual framework for the evolution of accounting and reporting in the public sector is based upon the notion of accountability and management control (Mills, 1977).

At this point, the efficient markets literature should be recognized with respect to its empirical findings that people are unable to obtain "excess returns" on the basis of publicly available information (Kaplan, 1975). These findings do not imply that public information releases contain "useless information." The use of such releases is described by Hakansson (1976) in a manner consistent with empirical findings--public information releases will generally cause updating of beliefs and clarifying of some unresolved uncertainty which leads to increased trading (as evidenced by Beaver, 1968). Similarly the association of accounting data with market estimates of stock risk as found by Beaver *et al.* (1970), Beaver and Manegold (1975),

Gonedes (1975), and Lev (1974) implies financial information can be of assistance in forming expectations about security risk and return characteristics. Watts (1977) emphasizes the value of accounting and corporate financial statements in reducing agency costs as a better justification than the information hypothesis for the development of accounting. Accounting reports' usefulness as summaries of an extremely large number of complex transactions, i.e. a means of lowering the costs of gathering information, has been frequently cited in the literature. Additional references on information value with special emphasis on accounting information and the audit function are provided by Robert E. Hamilton in "Selected Bibliography for Auditing," February, 1978 (The University of Minnesota).

The Value of the Audit Function

Of particular concern in this study is the value of the audit function.

> The origin of auditing goes back to times scarcely less remote than that of accounting . . . . Whenever the advance of civilization brought about the necessity of one man being entrusted to some extent with the property of another the advisability of some kind of check upon the fidelity of the former would become apparent. (Brown, 1905, p. 75)

The simple existence of continued demand for auditors, assuming consumers are rational utility maximizers, suggests the audit had value at some time. However, a close examination of the demand determinants can explain the basis for current valuation of

auditors' services, provide a framework from which hypotheses can be derived, and identify potential inputs to a consumption-investment model regarding the decision to have an audit (preliminary application of a consumption-investment model to the audit area with a simulation study is provided by Scott, 1975).

A quasi-analytic approach (Blank and Stigler, 1957) will be employed to explore a variety of factors which general observation suggests are possible determinants of the level of employment of auditors. This approach serves the purposes of marshalling more or less systematically the existent body of relevant literature and empirical information; it formulates, with some explicitness, the areas of ignorance and the types of information necessary to remove them. The resultant set of demand determinants will not be tested in its entirety; however, specific hypotheses related to this general framework will be formulated and investigated.

Table 2 describes key audit demand determinants and the expected benefits related to each factor. These factors will be briefly explained and relevant literature and empirical studies will be cited. Table 3 itemizes "other factors" that can affect the level of demand for auditors. These factors should be self-explanatory.

In a competitive economy, if a significant number of firms are publishing audited information, those firms not providing this information set may be penalized on a relative basis (this

Table 2
Key Audit Demand Determinants and Their Expected Benefits

DEMAND DETERMINANT	EXPECTED BENEFITS Firm/ Individual Investor/ Societal
I. RELIABILITY	
A. Risk relative to other firms, i.e. competitors' provision of audited information	Higher common stock value Lower interest cost
B. Risk of information presented to stockholders and to creditors	Less risk premium through higher stock prices and lower interest
C. Deterrent to abuses, e.g. smoothing activities	Satisficing vs. maximizing costs are decreased
D. Error Check	Less loss from errors, e.g. lost billings or misstatements of financial position
E. Enforces Generally Accepted Accounting Principles	If better information, the result would be more comparability and improved decisions
F. Improves disclosure of information, e.g. related parties	Improves decisions and wealth Improves the allocation of resources
II. MANDATORY AUDITS	
A. Mandatory audit due to regulation: Securities and Exchange Commission	Broader marketability
B. Mandatory audit due to customer choice, e.g. the Department of Transportation in Florida requires audits from contractors	Broader customer base
III. EFFICIENCY	
A. Improved internal control	Less probability of loss from error or fraud
B. Improved efficiency	Cost savings in operations
C. Deterrent to fraud	Less cost for liability insurance Less loss from fraud
IV. EASES TAX PREPARATION AND OTHER SERVICES	Cross-subsidization of services

HYPOTHESES DEDUCED IN CHAPTER IV FROM THE ABOVE DEMAND FOR AUDITING FRAMEWORK: # 1, 1a, 6, 7

RELEVANT LITERATURE INCLUDES THE FOLLOWING: Arrow, 1963; Watts, 1977; Ng, 1976 and 1977; Benston, 1973 and 1977; A Statement of Basic Auditing Concepts, 1973; Chow, 1977; Magee, 1976; May and Sundem, 1973; Jensen and Meckling, 1976; Edey, 1968; Littleton and Zimmerman, 1962; Demski, 1972; Hamilton, 1975 and 1978; The Commission on Auditors' Responsibilities, 1977.

Table 3
"Other Factors" That Can Affect the Level of Demand for Auditors

Industrial patterns influence the use of auditors: Business Growth results in increased use and certain industries have greater demand than others
Financial characteristics of employing firms and institutions are relevant
Technological and scientific progress can impact demand for auditors (also statistical progress, e.g. sampling tools)
Complexity of clients can impact the demand for auditors
Expansion of government and expanding audit interests of government
Tests of legislative compliance require use of auditors
Growth in the number of stockholders and financial statement users can increase the demand level for auditors
The complexity of accounting may influence demand for auditors
Labor issues and cost issues influence audit demand: a) increases in the labor force may lead to increase in demand for auditors; b) death and retirement, as well as occupational change affect net demand estimates; c) shortages of Certified Public Accountants (CPAs) cause increased demand relative to supply--a barrier to entry exists for external auditors: excess demand leads to increased prices and to increased entry
Consumer tastes: a) pride of having an audit, and b) the trademark benefit from a "Big 8" firm or a firm with an established reputation

idea corresponds to I.A. on Table 2). For example, assuming an audit confirms the original positive expectations of investors, the beta (relative risk measure in finance, i.e. the estimate of the covariance between the return on the stock and the market return normalized by the variance of the market) of a firm issuing audited financial statements may prove to be lower than the beta of a firm exactly the same, except for the unaudited status of publicly available information. If one identifies three major types of risk, (1) lack of information, (2) operating risk, and (3) financial risk, the overlap of these three can supply a rationale for the lower beta. Improved information can lead to more accuracy in estimating (2) and (3), which would lower the overall risk of an investment. Improvement of information should lead to improved evaluation of securities and formation of portfolios, minimizing the error term in the market model (based on the Capital Asset Pricing Model developed and elaborated by Fama (1971) and others). Professors von Neumann and Morgenstern consider a preference pattern not only among certain alternatives, but also among alternative probability distributions. In the theory of consumer's choice, each alternative would be a commodity bundle (Arrow, 1963), and all other things equal, a more accurate probability distribution for expectations on operating and financial risk would lower the risk of the "bundle" offered for investment by a company issuing audited financial statements <u>relative</u> to firms which were similar in other respects but did not provide the

information. Assuming risk averse investors, the value of the firms supplying audited statements would be expected to increase--although Arrow's Possibility Theorem, implying individual values tell nothing about group preferences, forces this to become an empirical question--and creditors' risk premiums should decline. Watts (1977) states corporate managers (and investors) are rewarded in terms of expected value for contracting to supply information for monitoring bond covenants at the times of entering into the covenants by being able to sell the shares or bonds at higher prices with the covenants than without them. The characterization of financial reporting processes by biasedness and noise in Ng (1977) includes modeling of the potential effect of external audits with respect to these attributes.

Also regarding the reliability issue (I.B. on Table 2), the concept is essentially the same except the comparison is within the firm as opposed to a relative assessment of the role of information differentials between firms.

> Since it is obvious that "improper" financial statements may be used to deceive, it also is obvious that investors will rather quickly become aware of the dangers they face in relying on the statements. This is why certified public accountants exist. They are independent experts whose "stock in trade" is an integrity that is rarely compromised. (Benston, 1977, p. 21)

Rationale for this reliability demand determinant is offered by the remoteness condition discussed in A Statement of Auditing Concepts (1973). The absentee ownership characteristic of firms

combined with the size of operations has led to prevention of the user from directly assessing the quality of information received. The relationship between shareholders and managers is an agency relationship with monitoring and bonding costs as well as residual loss possibilities. Chow (1977, p. 20) tests hypotheses concerning audit demand derived from agency theory:

> . . . it is hypothesized that, ceteris paribus, the likelihood that a firm would voluntarily hire an external auditor increases with (the) ratio of total debt to total assets, (the) total number of employees, and (the) capital good nature of its products, and inversely with the equity share of its top manager.

The first two variables were significant in the hypothesized direction, the third variable was significant in the opposite direction than expected, and the last variable was found to be unimportant. Chow concludes that the agency theory deserves further investigation. Agency theory is also applied by Magee (1976).

The value of audited financial statements in reducing agency costs is discussed by Jensen and Meckling (1976, p. 338).

> Suppose, for example, that the bondholders (or outside equity holders) would find it worthwhile to produce detailed financial statements such as those contained in the usual published accounting reports as a means of monitoring the manager. If the manager himself can produce such information at lower costs than they (perhaps because he is already collecting much of the data for his own internal decision making purposes),

> it would pay him to agree in advance to incur the cost of providing such reports and to have their accuracy testified to by an independent outside auditor.

Note the emphasis in the above quotation upon accuracy. The auditor's potential liability for third-party damages arising out of misstatements or material omissions (Common Law and SEC) suggests that one role of the audit function is assuring accuracy, which is one facet of reliability. In examining this idea as a demand determinant, however, the potential dampening effect of liability suits should be acknowledged. Of course, the liability suits holding auditors accountable to third parties may increase demand for audited statements, since this enforcement mechanism can improve the perceived quality of the audit opinion. Overall, as the reliability of financial statements increases, risk premiums to stockholders and to creditors would be expected to decline.

A deterrent to abuses in financial reporting such as smoothing activities (I.C. in Table 2) should be provided by the audit due to the enforcement of Generally Accepted Accounting Principles (GAAP) (I.E. of Table 2). While the smoothing hypothesis has been formulated from firms under GAAP, it is evident that the number of reporting alternatives rises significantly when a firm does not comply with GAAP. Incentives for such practices are discussed by Monsen and Downs (1965). The "satisficing" behavior they suggest should decline relative to maximizing behavior as alternatives for "abuses" decline. The audit opinion rests upon

the GAAP framework (AU Section 411 of the Codification of Statements on Auditing Standards, AICPA, 1977). Due to this dependence, the audit function enforces the application of GAAP. If it is assumed GAAP provides better information than alternative reporting options and/or that GAAP provides increased uniformity of reporting (in contrast to no GAAP) and therefore increased comparability of investment and credit alternatives, it is reasonable to expect improved decisions through enforced Generally Accepted Accounting Principles (this idea relates to I.F. in Table 2).

The issues of increased information leading to improved resource allocation in the economy is addressed, with a proof, by May and Sundem (1973). Audited financial statements provide a means of confirming or correcting the information received earlier by the market, i.e. auditing helps to assure market efficiency by limiting the life of inaccurate information, or by deterring its dissemination (The Commission, 1977). Ng (1976) models the effects of external audits in a capital market equilibrium context with heterogenous and homogeneous expectations (he also examines the issue of compulsory audits). Improved information in the form of audit disclosures, e.g. related parties, (I.F. on Table 2) should improve decision making and in turn increase the wealth of information users. The increased information level should result in a more efficient market and more appropriate asset pricing.

An error check is provided by the audit function (I.D. of Table 2). Tests of reasonableness, sampling of transactions, and numerous audit procedures can uncover errors and decrease loss from billings or errors in reported financial statements. Hamilton (1975) discussed the signaling and insurance (restriction of moral hazard) views of the audit function which are applicable to several of the demand determinants already discussed, including the usefulness of the audit as a detector of errors.

Demand determinants II.A. and II.B. on Table 2 involve regulation and customer requirements for audited information. If audited statements are a prerequisite to "going public" or to providing a firm's product or services for certain customer groups (e.g. state agencies), then there is derived demand for the audit. However, in reviewing the regulation literature, there is clear evidence that demand for audits persists in the absence of regulation. Littleton and Zimmerman (1962) identified auditing as a common practice in England before audits were made mandatory by the Joint Stock Companies Act of 1844. Although the requirement was abolished from 1856 to 1900 Edey (1968) suggests audits were not unusual during that period. In the United States Benston (1973) found that a majority of New York Stock Exchange firms were audited prior to the Securities Acts of 1933 and 1934 (although it must be noted that the New York Stock Exchange had some audit requirements prior to 1933).

Internal control improvement should be expected from an audit (III.A. in Table 2) for several reasons. (1) A common professional service of auditors is to recommend ways in which internal control can be improved. (2) A good internal control system should lead to decreased audit cost; thus clients have an incentive to improve internal controls. (3) Some users request internal control reports from auditors (this may become a common practice if the Cohen Report (The Commission, 1977) recommendations are accepted; in fact Statement on Auditing Standards #20, August, 1977, concerning communication of material weaknesses in internal accounting control represents a move by the profession toward such reporting) which should also supply an incentive for improvement of internal control. One purpose of a good system of internal control is to make collusion a prerequisite for fraud; therefore, an improved internal control system should lower the probability of loss from fraud. Proper accounting control (as discussed in Section 320 of the Codification of Statements on Auditing Standards, AICPA, 1977) should lower the probability of loss from errors.

In addition to suggestions for internal control improvements, auditors may suggest ways to increase efficiency (III.B. of Table 2). Significant cost savings may be realized through establishing efficient accounting techniques.

The ability of an audit to deter fraud (III.C. of Table 2) is discussed in the Cohen Report (The Commission, 1977), including

the idea that anticipation of the audit may influence managers' and employees' conduct and lead to more acceptable behavior.

> . . . we must recognize cheating on the part of the manager. He may be motivated to ignore the constraints. . . Hence, the owner may counter with an audit policy and associated penalty functions. This, in turn, moves the problem in the direction of a noncooperative game. (Demski, 1972, pp. 249-250)

Peat, Marwick, Mitchell & Co. has recently called for a research effort in the area of fraud recognition and prevention. A concerted effort by the profession may lower the occurrence rate of frauds and lead to lower liability insurance and bonding costs.

While a minor consideration, the audit does provide the opportunity to accumulate important tax information which can lead to ease in tax preparation. Similarly, insights gathered on an audit can lead to reduced costs for management services (these ideas relate to IV. in Table 2). The recognition of cross-subsidization and advantages in having a single accounting firm provide needed services is suggested by the Burton and Roberts (1967) study which found demand for additional services to be the primary cause of change in auditors. However, it should be noted that an auditor's independence may be impaired by the performance of other services, as discussed in The Commission on Auditor's Responsibilities (1977).

As stated earlier, this approach to identifying determinants of demand uncovers areas of ignorance. The sparseness of references

to empirical studies throughout the prior discussion indicates a need to empirically investigate the role of the factors cited. Little is known about the presence or magnitude of the benefits suggested in Table 2, and no causal link to the factors of demand has been developed. Some of the determinants and related benefits will be difficult to operationalize; however, the purpose of this section is to develop a general audit demand framework from which specific hypotheses can be deduced. The researcher utilizing the framework is faced with the task of operationalizing the variables identified.

CHAPTER III
LITERATURE REVIEW

In formulating hypotheses and interpreting empirical test results concerning the impact of financial reporting on net interest cost and bond rating, one must consider the possible effect of other determinants of interest cost and bond rating, as identified in past studies. Most research in the area has been done by academicians in finance and economics. These theoretical discussions and empirical results provide a foundation for accounting extensions. Some work has focused on the impact of risk variables on net interest cost. Others have looked to prediction of bond ratings or the impact of bond ratings on interest cost.

Hastie

Hastie (1972) identified two types of factors that influence municipal bond investors' after-tax yields. These factors include (1) those that affect the estimate of default risk and (2) those that affect the estimate of marketability.

He identified three measures that might be relevant to assessing factor type 1; these measures include those that consider (1) relative debt burden, (2) the city's economic base, and (3) the municipality's default history. He also identified

the following three measures relevant to assessing factor type 2: (1) measures of block size marketability (e.g. costs of analyzing, acquiring, and servicing one large block may be less than servicing several small blocks of the same value, and may lead to higher prices for larger blocks by large investors), (2) measures of issuer marketability, and (3) measures that predict future marketability.

Hastie (1972) investigated the determinants of municipal bond yields, utilizing a regression model with eight variables, as listed below.

1) Overall indebtedness as a percent of full value of taxable property (Factor (F) 1, Measure (M) 1)
2) Economic diversification (F 1, M 2)
3) Number of college students as a percent of the city's population (F 1, M 2) (It is widely accepted that universities are a stabilizing factor in the economic base of cities.)
4) Municipal default: dichotomous variable--1 if default, 0 if no default (F 1, M 3)
5) Logarithm of block size of bonds offered for sale (F 2, M 1)
6) Total outstanding direct debt, measured in 100 millions of dollars (F 2, M 2)
7) Population change: ratio of last census date to previous census date (F 2, M 3)
8) Term to maturity: measured in 100's of months (This had to be included since it is not possible to study a sample of bonds with a common maturity date because the secondary market for municipals is not active.) (Hastie, 1972, pp. 1734, 1735)

To apply the regression model, two major suppliers of funds (demanders of bonds) were identified; these suppliers were individual investors and commercial banks. Then the

factors' relative importance to both groups of investors was tested by least squares regression for all noncallable general obligation municipal bonds in the Blue List of Current Municipal Offerings; the bonds selected had maturities of 15 to 25 years which were new quotations during the cross sections of time spans examined for periods differing in commercial bank activity. The sample size varied from 109 to 143 bonds.

While the regression coefficients were not stable over all cross sections, grouping by investor type indicated commercial banks stress factors such as overall debt to true value, economic diversification, and block size. When investors on an individual basis are dominant, population growth, college students, and default history are the most important. The R^2, or percent of variation in yield accounted for, in 1967 (dominated by commercial banks) was .747; 1963 (dominated by banks) was .55; 1960 (dominated by individuals) was .240; 1957 (dominated by individuals) was .596; and 1965 (both groups were active) was .272.

A result obtained which differs from other bond studies is that large issues are penalized rather than helped by their size; Hastie hypothesized this was due to the separate measure of economic diversification. This point concerning diversification is developed by Forbes and Petersen (1976): a very large issue conflicts with investors' efforts to reduce their risk by

diversifying their portfolios. The increase in the supply of debt reduces the ability of the market to provide diversified portfolios. Hopewell and Kaufman (1977), using a large sample of bonds sold in the summer of 1973, suggest that the pattern of bidding follows an inverted U-shape; the peak in the number of bids occurs at approximately $12 million, with smaller and larger issues receiving fewer bids. Overall, Hastie indicates the municipal bond yields are a function of the bonds' default risk and the bonds' marketability.

Kessel

Kessel (1971) found the larger the number of bids, the better off the issuers in terms of lower underwriting costs. In this study competition is represented by the number of bids submitted. Observations included all new issues (9,420 in total) reported by the Bond Buyer as submitted for competitive bids between Spring of 1959 and Spring of 1967. The variables observed were (1) quality rating, both Standard & Poor's and Moody's; (2) size of issue; (3) average life of issue; (4) amount of prior outstanding tax-exempt bonds of the issuer; (5) absence or presence of call provisions and, if the bonds were callable, the first call date; (6) date of issue; (7) number of bids submitted; (8) general obligation or revenue bond; (9) dollar cost of issue to underwriters; (10) dollar receipts of underwriters derived from reoffering prices; (11) twenty-year reoffering yield, that is the

yield-to-maturity of the twenty-year bond in an issue; (12) the so-called net interest cost; and (13) whether the manager of the winning syndicate is a commercial bank or an investment banker. The study identified an inverse relationship between bids and the level of interest rates (Kessel, 1971). The results included t-values in excess of 15 in absolute value for variables #1, 2, 3, and 7.

Kidwell

Kidwell (1977) ran a regression including (1) true interest cost of municipal bond issue, (2) weighted average term to maturity, in years, (3) issue size, in dollars (little significance was identified), (4) number of bids submitted, (5) general obligation (G.O.) was set equal to zero and revenue bonds were set equal to one, (6) default risk (Moody's), (7) prevailing market interest rate, in percent, and (8) call provision. The independent variables in the model account for 62% of the inter-issue variation in the true interest cost among general obligation bond issues. The inclusion of a call provision had no statistically significant effects on G.O.; revenue issues were affected at .06, but with a sign contrary to the hypothesized effect of higher interest with call provisions. Further study is needed. More detailed modeling of call information resulted in 75% of the inter-issue variance in interest being explained among general obligation bond issues and 71% among revenue bond issues. Only the call

deferment period significantly affects new issue borrowing cost; the shorter the period, the higher the ex-ante interest cost.

> On a twenty-year bond issue, a ten-year call deferment period raises interest cost on the average 20 basis points over a similar noncallable issue. (Kidwell, 1977, p. 75)

Among the variables, #2, 4, and 7 were significant at the .01 level of significance and the general obligation sample resulted in #6 and 8 being significant at .01.

Carleton and Lerner

Carleton and Lerner (1969) developed a statistical scoring system that hoped to duplicate the ratings of Moody's. Their results were only slightly better than 50% accurate. The variables included were as follows:

1. School District. This is a dichotomous variable, a municipality receiving a score of 1 if a school district, (expect a lower credit rating for school districts).
2. Debt/Assessed Valuation, (a high ratio *ceteris paribus* should be associated with a low credit rating). (This was an important discriminating variable.)
3. Debt/Population (a high ratio *ceteris paribus* should be associated with a low credit rating).
4. Logarithm of population, (a large population should be predictive of a high bond rating). (This was an important discriminating variable).
5. Logarithm of debt.
6. Average collection rate for current tax, (the higher the collection rate, the higher the credit rating). (This was an important discriminating variable.) (Carleton and Lerner, 1969, pp. 752, 753)

Kidwell and Hendershott

Kidwell and Hendershott (1977) documented the presence of regional-market segmentation within the tax-exempt bond market. An increase in the relative supply of small size tax-exempt bonds in a regional market increases both regional borrowing costs and costs of particular bond issues relative to those nationwide. But at least part of the impact disappears over a three-month period. The slope of the yield curve (related to the impact of fiscal maturity) was found to reduce unexplained variance by five percentage points.

The Importance of Bond Ratings

The importance of bond ratings is prevalent in the literature (Ross, 1976) as a key variable in empirical work and as a major concern in the investment community. Moody's and Standard & Poor's ratings "have assumed almost Biblical authority throughout the American investing economy and have an enormous influence on banks, trustees, institutional investors, and individuals" (Financing, 1967, p. 58). Financial portfolio regulation and bond ratings have been inextricably related since the Banking Act of 1936 identified acceptable investments as those supported as eligible based on "not less than 2 rating manuals" (the first four grades met requirements). Although this specific requirement was deleted in 1938 (Hickman, 1958), unofficial discussions with bank examiners indicate that the rule is still followed (Hickman, 1958). Another

official use of bond ratings is in figuring net sound capital of commercial banks; bond ratings are utilized in the establishment of valuation standards for life insurance company investments (Hickman, 1958). The perceived importance of bond ratings to municipalities as a key issue in borrowing costs is evidenced by the prevalence of the topic in the Hearings before the Subcommittee on Economic Progress of the Joint Economic Committee, Congress of the United States, in 1968 (Financing, 1968). Other literature discussing the importance of bond rating changes to municipalities besides Jantscher's study, already discussed, includes Tyler, 1959; Morton, 1973; Rubinfield, 1972; Horton, 1970; Petersen, 1974; Phelps, 1961; Hempel, 1971; Sherwood, 1976; Hickman, 1958; and Harold, 1938.

Corporate and Utility Bond Rating Studies

There have been several empirical studies concerning bond ratings of corporate and utility securities. Altman and Katz (1976) assessed the informational content of published financial data as to its ability to discriminate between bond quality ratings assigned to firms in the electric public utility industry; they correctly classified 77% to 91% of their samples. Horrigan (1966) attempted to predict the six highest bond classifications of both Standard & Poor's and Moody's, with a multiple regression model utilizing financial ratios as independent variables, and was over 50% successful. West (1970) utilized the Fisher Model (Fisher,

1949 and 1966) to explain the top six classifications of Moody's and had a 62% to 74% accurate model, based on the independent variables of earnings variability, years without loss to creditors, capital structure, and market value of bonds.

Pinches and Mingo (1973) utilized a discriminant analysis methodology to classify bonds with a function involving financial ratios and accurately classified approximately two-thirds of their sample. Pogue and Soldofsky (1969) utilize a type of linear discriminant analysis to analyze the conditional probability that a firm will belong to one of a pair of bond ratings and conclude that differences in ratings can be explained fairly well by available financial and operating statistics (the original sample used to estimate the regression equation was 80% accurate in predicting new ratings). Fraine (1962) and Mills and Fraine (1961) studied the problem of whether agency ratings are a substitute for the ultimate indicator of quality, dollar losses, and found loss rates increased directly with reduced bond ratings. Similar results were obtained by Hickman (1958) and Atkinson and Simpson (1967). Schwendiman and Pinches (1975) examined the relationship between bond ratings and bond risk premiums. Reilly and Joehnk (1976) estimate market-determined bond risk measures and compare them with the bonds' assigned agency ratings. Rozeff (1977) did an empirical investigation similar to Reilly and Joehnk; however, he obtained opposite results when he identified the expected (based on finance theory) relationship of the beta and bond rating.

The quantity of studies concerning ratings evidence the growing interest in the bond market, with specific concern for the structure of bond ratings. As noted, several studies included a variable relating to financial data, e.g. a debt ratio; this lends some support to the basic contention that financial reporting practices will affect bond ratings and interest costs. Also, available descriptions of the bond rating process, e.g. Philips (1975), suggest that bond raters rely heavily on accounting based rather than market based measures. It should be recognized that the finance studies cited have been criticized in their application of regression analysis assuming bond rating is on an interval scale. If bond rating is more of an ordinal than interval dependent variable, difficulties as discussed in McKelvey and Zavolina (1975) arise, e.g. expected value of the error term does not equal zero and the error term is not normally distributed. However, Kaplan and Urwitz (1977) thoroughly discuss such methodology considerations in formulating statistical models of bond ratings and test the more theoretically appealing probit estimation with ordinary least squares and finally conclude that ordinary least squares is robust and does not bias the equation as anticipated. This empirical finding with its methodology implications is applied in this research effort as support for utilizing ordinary least squares in the analysis.

Research Involving Municipal Financial Reporting and Audit Practices

Previous work by Rubinfield (1973), Bahl (1971), and the studies discussed here in detail provide insight into important determinants of municipalities' net interest cost and bond rating. A few studies have looked at the audit function in the municipal area.

Golaszewski (1977) studied the impact of internal versus external audits on net interest cost with a sample of 80 bond issues in Pennsylvania. Variables tested in the regression model include 20 bond index for the week of issue, the 20 bond index for the week prior to issue, the prime commercial rate on the day of issue, the gross principal amount of the bond issue, average maturity in years, whether the issue is callable and first call date, length to last repayment in years, rating, audit by an independent CPA, percentage of uncollected taxes in the year prior to the issue, census population, census median family income, assessed value of tax base, and direct debt of the issuer. Stepwise regression was applied. Regression results indicate an external audit is associated with lower net interest cost. The data collected were also subjected to an initial factor analysis in which six factors were formed that were very consistent with the theory of the municipal bond market: size, net present value, bond market conditions, risk classes related to bond ratings, and quality measures were the factor explanations provided by Golaszewski. A discriminant analysis of the external

and internal audit variable led to correct classification of the issues covered in the sample examined. Limited evidence is provided on bond rating agencies' consideration of the audit function as a relevant attribute of an issuer being rated. The findings that if an issuer undergoes an external audit, the net interest cost is reduced by about 16 basis points offers encouragement that the present study will find a significant impact in the investigation of auditing and financial reporting variables and their effect on net interest cost.

Zimmerman (1977) found that mayoral cities are more likely not to be audited (43%) than the manager cities (18%) and that manager cities are more likely to engage national auditors (35%) than mayoral cities (13%).

There has been interest in financial reporting practices of municipalities. Bourque, Forbes, and Petersen (1977) studied reporting practices between 1975 and mid-1976 and found in 1975 about 40% (1976, 54.5%) of the standard set of Disclosure Guidelines of the Municipal Finance Officers Association (MFOA) were met. A Coopers and Lybrand (1976) study and Davidson et al. (1977) study also focus on existing financial reporting practices and suggest revisions.

Constantine and Dwyer (1977) test the hypothesis that bonds with high ratings disclose more information than bonds with low ratings.

The studies discussed examine reporting issues, the impact of quantity of information, and the comparison of internal and external audits. However, the quality of information, detailed attributes of the auditor and client, and information accessibility have not been examined. The municipal bond issue process and rating institutions have not been thoroughly examined regarding audit sensitivity or the valuation of reporting practices.

CHAPTER IV
FORMULATION OF HYPOTHESES

Based on a review of the accounting, finance, and economic literature in the area of bonds, with particular emphasis on municipalities, examination of municipalities' financial reports, preliminary and official statements, and auditor general's reports, and interviews with attorneys, accountants, investment bankers, and government officials, the following hypotheses have been formulated. The audit demand determinant framework developed in Chapter II will be adapted to auditing in the municipal area and supplies the rationale for several of the hypotheses to be tested. Applying the philosophy of science literature (Yu, 1976), the concept that auditing has value can be thought of as the general hypothesis from which subhypotheses 1, 1a, 6, and 7 are derived, while information (especially accounting information) value is the general hypothesis for subhypotheses 2, 3, 4, 5, 8, and 9.

The hypotheses implicitly have a ceteris paribus assumption. Variables not mentioned in the hypothesis are assumed to remain unchanged as the specific independent variable is varied. There

is no attempt made to provide operational definitions of the variables discussed. This measurement problem is deferred until Chapter VII.

Hypotheses To Be Tested

I. The Audit Process

H_1 : An audit has a favorable impact on net interest cost (decreases net interest cost) and bond rating (increases bond rating).

H_{1a}: Audit assurance attracts more bidders, i.e. more competition, which drive net interest cost down.

H_2 : The impact of the audit is lessened if the audit opinion is qualified.

II. The Auditor

H_3 : A "Big 8" audit has a more favorable impact than an audit by other CPAs in private practice.

H_4 : Audits by CPAs in private practice will have a more favorable impact than audits by state auditors. (The issue focuses on the substitution of auditors.)

III. Accounting Methods

H_5 : The larger the portion of a fund "covered" by an accounting method in accordance with Governmental Accounting, Auditing, and Financial Reporting (GAAFR), the more favorable will be net interest cost and the bond rating.

IV. Conditioning Factors

H_6 : The audit impact is greater for those municipalities with deficits in the general fund.

H_7 : The audit impact is greater on revenue bonds than on general obligation bonds.

V. Other Experts and Special Reports

H_8 : A special report from an accountant (e.g. pertaining to the mathematical accuracy of debt service), will have a favorable impact on the net interest cost and bond rating.

H_9 : The holding of a Municipal Finance Officers Association (MFOA) Certificate of Conformance has a favorable impact on the net interest cost and bond rating.

Theoretical Arguments

Theoretical arguments have been developed for these hypotheses.

H_1 : An audit has a favorable impact on net interest cost and bond rating.

The rationale for audit value is supplied by the demand determinant framework developed in Chapter II. Since the concern of this research effort is with municipal audits, it is important to recognize the distinguishing characteristics of a governmental unit.

(1) A governmental unit does not operate for a profit; instead it operates to allocate limited resources for constituents' benefit.
(2) Legal and quasi-legal requirements reign supreme.
(3) The budget is a very dominant factor.
(4) There are no equity interests (besides, any interest in a municipality is non-transferable).
(5) A cost-benefit relationship may not always exist (e.g. a childless couple paying school taxes).
(6) Governments have the power to raise involuntary

capital.
(7) Governmental services may be a monopoly.
(The basic listing is provided with more detail by Mandolini et al., 1977.)

Another consideration is that continuity of management appears uncertain since the governing body (board of directors, so to speak) is elective (Kerley, 1977). In examining audit value, five principle parties interested in governments' financial statements need to be recognized: taxpayers, investors (creditors), legislative bodies, higher levels of government, and administrators. Each of these parties has incentives which can be contrasted with incentives that exist in the corporate market (Zimmerman, 1977). For example, Zimmerman (1977, p. 23) suggests

> . . . the debt holder's incentive to monitor the politician is weaker than the equity holder in the corporation who is able to capture more of the capitalized stream of eliminated corporate "inefficiencies" in a higher share price.

Despite such acknowledgment of differences in corporate and municipal audit demand, each of the demand factors discussed in Chapter II would also relate to the municipal area, with the adjustment that regulation stems from state versus SEC sources, smoothing would not be directed to the net income figure, and stock option type incentives (and bonuses keyed to net income) for abuses will not exist for management teams of municipalities.

Given that audits are valued, especially due to their effect on the reliability and comparability of financial statements, efficiency of operations, and frequency of errors and frauds, one

would expect the interest cost of debt to be lowered to municipalities and the bond rating to be upgraded. The existence of a requirement that audit reports for the past two years be provided by any entity desiring a rating from Moody's Investors Service, Inc. supports the recognition of value in the audit function (Financing, 1967 and 1968). This requirement, however, is not met by all clients of the rating agency.

It should be acknowledged that if significant misstatements occur prior to an audit, it is possible that the audit can be accompanied by less favorable reports on the financial position of a municipality. Such a phenomenon works against the hypothesis and may result in a lack of statistical significance in this analysis despite the existence of audits' favorable impact on net interest cost and bond ratings.

H_{1a} : Audit assurance attracts more bidders, i.e. more competition, which drive net interest cost down.

Finance literature suggests the dominance of risk averters in the investment community (Levy and Sarnat, 1972). Given that an audit lowers the level of risk for a municipality's securities, it appears logical to expect an investment with a lower level of risk to be attractive to a greater number of investors. This increased competition would be expected to lower net interest cost due to the nature of competition and its traditional impact on "prices" as developed in the economic literature (Kessel, 1971, supports this relationship).

Based on existing institutional requirements that bonds be rated at a particular level to qualify for investment, if it is shown that the audit impacts ratings favorably, this, in turn, would increase the number of institutions willing to buy bonds, i.e. marketability would improve.

Anecdotal evidence is available that certain underwriters will refuse to bid on an issue due to the lack of an audit: the analyst speaking at the MFOA Colloquia on Disclosure and Current Reporting for State and Local Government Security Offerings (Dallas, Texas on October 28, 1977) suggested this was the case for a recent State of Missouri issue and a June, 1977 issue from Pima County (Tucson), Arizona. Similarly, Ohio and New Jersey as well as various other large local governments in different states experienced well publicized difficulties in marketing bonds because of alleged disclosure problems (Forbes and Petersen, 1976). The Tower Amendment (a provision of the Securities Acts Amendments of 1975) which tends to shift (information) responsibility to underwriters or those initially buying the securities has led to more information being demanded by underwriters and more attention has been given to the presence of an audit.

It is also possible to consider the number of bids submitted to be a measure of the breadth of the municipality's market, i.e. a small number of bids could represent a regional market. A municipality that markets to a small sector that has access to the

government unit and knowledge of its operations may not need or value the audit verification process. The larger market, however, must rely on the auditor to provide sufficient data for investment decisions.[1] This argument corresponds to the remoteness justification for the value of an audit as developed by A Statement of Basic Auditing Concepts (1973). Thus, the presence of an audit may facilitate a larger market for a municipality's bonds.

The examination of the number of bids submitted is a way of examining a means of preference revelation discussed by Lev (1977). In future work, changes in bids over time would be a more direct test.

> . . . it is generally overlooked that investors have an additional, powerful way of expressing their preferences for financial information. Given the large number of available investments and the relatively low transaction costs, investors can <u>shift</u> from one investment to another seeking the most preferred information structure for their specific needs. Thus, the movement or absence of movement by investors can be a substitute for the usual market test for private goods of willingness to buy a commodity. Users of financial information can thus "vote-with-the feet" and thereby reveal their preferences. . . . the efficiency of the "voting-with-the-feet" process depends, among other things, on the existence of a wide variety of information systems to allow users to choose and express their preferences. . . . there is undoubtedly an urgent need for research on the ability of market information generating processes to substitute for some activities of regulators, or in general, on the optimal balance between regulation and free market forces in the production of financial information. (Lev, 1977, p. 25).

The wider variety of financial information systems in the municipal area offers an opportunity to examine users' information preferences.

Although the "vote-with-your-feet" idea was criticized by Mendelson (a commentary given at the same conference, 1975) due to investors' primary concern for the parameters of the assessed distributions of returns rather than the information structure, as well as (1) their consideration of numerous factors in forming portfolios, (2) the unjustifiable effect on resource allocation which might result from an emphasis on information structure, and (3) the possible result of producing information which is not useful, it does provide a proposition worthy of examination.

H_2 : The impact of an audit is lessened if the audit opinion is qualified.

It is contended that investors place significant reliance upon the audit opinion to signal problems by means of a qualified opinion. Qualifications are assumed to have information content concerning the risk level of a municipal bond, i.e. municipal bond issuers with qualified opinions have a higher level of risk than municipal bond issuers with clean opinions. However, the type of qualification warrants consideration, since common "consistency" qualifications in the municipal area would not be expected to differ from clean audit opinions.

It is recognized that it is difficult to separate the reason for a qualified opinion and the qualification itself. However, this distinction is not necessary for a test of this hypothesis. The point of the hypothesis is that regardless of the cause of qualification, any opinion other than a clean opinion communicates a problem to the investor, (although types of qualifications will be considered, as suggested earlier). This limitation on the auditor's opinion likewise lowers the value of the audited financial statements, since despite independent examination of the reports, the reports carry the stigma of being "qualified."

It is interesting to note that the key distinction between GAAFR and the American Institute of Certified Public Accountants (AICPA) traditionally--the precedence of legal compliance over fairness of financial statement presentation by GAAFR--was eliminated when the National Council on Governmental Accounting (the body that replaced the National Committee on Governmental Accounting) stated

> where the objective of the governmental entity is an unqualified opinion on the financial statements, legal compliance, if not adequately disclosed in the financial statements could be presented by the government body in the form of supplemental statements or schedules. (National Council, 1976, p. 41)

This recognized desire for an unqualified opinion suggests its relative value over other audit opinions.

The relationship between Hypotheses 1 and 2 (to be tested) is that there exists motivation for obtaining an audit, regardless of the type of audit report, and unqualified opinions are preferred over other opinions, given the presence of an audit. Such a position is based on the idea that qualified audit opinions have both "good" and "bad news" and that they are more valued by the users than no information whatsoever. (Some support for the idea that "packages" of financial information, including audits, are provided without regulation and are valued is provided by Choi, 1973.)

The perceived importance of qualified opinions is evident from the following passage contained in a letter to the American Institute of Certified Public Accountants (AICPA) and the American Bar Association (ABA) from the Financial Executives Institute (Benson, 1977, p. 73):

> If the auditing and legal professions persist in firming up their respective self-protecting positions, we foresee a rash of qualified opinions which would project a seeming deterioration of business conditions which is nonexistent, and which would have an adverse impact on the credibility of financial statements and, indeed, the securities market in general.

With the substantial increase in disclosure burdens of companies (Stabler, 1977) it has been hypothesized that a greater acceptance of qualified opinions by clients may evolve. As long as users discriminate properly between types of opinions, the cost of this trend should not be great (from the users' perspective). Evidence that users do distinguish between types of audit reports and correctly

understand the message intended by auditors is provided by Libby (1977). However, if no distinction is made, liability and professional effects on auditors could be substantial (however, the efficient markets discussion which follows must also be considered as a potential explanation of "apparent no distinction"). Thus evidence on this hypothesis can provide an empirical base for analyzing the impact of this forecasted trend in audit opinions.

The support of this hypothesis would indicate users' ability to discriminate between clean and other than clean audit opinions on significant matters, acknowledging preferences for a clean opinion.

If the hypothesis is not supported, an explanation is offered by Beaver (1976, p. 5).

> The efficient market implies that the substance rather than the form of disclosure may be the more important policy issue. . . . once in the public domain it is unclear whether format used to display the data is a substantive issue. For example, while it may be important that an item appear somewhere in the annual report, it may not make any difference _in terms of the price of the security_ whether the item is reported in the footnotes or in the body of the statement. Similarly, it would make little difference whether the income statement effects of an item are explicitly reported, if they could be inferred from balance sheet disclosure.
> . . . it may be naive to believe that merely because an item does not appear in the financial statements, it is not reflected in the prices. The security price research is consistent with a market that uses a broad information set of which the published financial statements may be only a part.

> . . . A considerable amount of information flows from corporations to the investment community via the information search activities of the analyst community.

The ramification of Beaver's (1976) comments is that if information is available for financial statement adjustment to reflect the qualification effect, the qualification by itself may not impact net interest cost or bond rating. Accepting the sophisticated investor's role (The Wheat Report, 1969) in interpreting and disseminating data, the theoretical contention that the development of a learning set enables adjustments (Livingstone, 1967), and the evidence offered by Dyckman *et al.* (1975) that adjustments are made by knowledgeable investors, there is reason to suggest this result may occur. However, efficiency of nonpublished data is not established, so the qualification is still hypothesized to impact net interest cost and bond rating.

The focus on types of opinions issued by Warren (1975), Neumann (1968), Gosman (1973), and Shank and Murdock (1977) as means of examining accounting firms' risk preferences, the uniformity of materiality judgments, and the competitiveness between auditors clearly suggests that the type of opinion issued is of some importance and interest. Ng (1977, p. 16) specifically addresses the information effect of the type of audit report.

> The information effect of external auditing is due to the fact that different audit reports

> may be released at the end of a period and these may serve as additional information signals to the investors.

H_3 : A "Big 8" audit has a more favorable impact than an audit by other CPAs in private practice.

The "Big 8" auditor will have a national reputation and a familiar name to offer the average investor. The value of "brand names" is well developed in the field of marketing and is applicable to the "Big 8" firm name. National reputation facilitates appeal to a larger market of investors. Benston (1976, p. 486) reports that user groups in England actively demand and control specific modes of financial information:

> (Issuing houses (investment bankers and underwriters)) exercise control over the contents of prospectuses, since public acceptance of a security issue depends importantly on the reputation of its sponsor. Consequently, most prospectuses include a statement by a generally well-known firm of chartered accountants (called reporting accountants) in addition to the statement by the company's auditor.

A similar interest in "who the auditor is" exists in the United States, as indicated by the following quote from a municipality's official statement (these are common specifications for Florida):

> The issuer shall also, at least once a year, within sixty (60) days after the close of its fiscal year, cause the books, records, and accounts relating to the total annual budget of the issuer including the pledged funds to be properly audited by a recognized independent firm of public accountants. . . . If the

> auditors selected shall be changed at any time, written notice of such change shall be furnished to the initial purchaser of the obligations and to at least two of the rating agencies having their principal office in New York, New York.

Interviews with experts in the municipal area have indicated that some underwriters and investors specify "Big 8" firms (and some regional firms) as auditors. The importance of underwriters' influence on the selection of auditors is suggested in the literature by Chow (1977). Empirical support for preference of "Big 8" auditors is supplied by Carpenter and Stawser (1971) who examined the reasons behind switching of auditors.

> They queried a sample of firms "going public" for the first time, and found that in most of the cases where one auditor was a "nationally known firm." The major reason for such a change in auditors was the underwriter's opinion that a well known auditor was necessary to sell offerings at the highest possible price. A study by an ad hoc committee of the AICPA came to similar conclusions (as discussed by Carpenter and Strawser). (Chow, 1977, p. 3)

Benston (1977, p. 21) states

> there is reason to believe that the security underwriter's and public accountant's reputations would offer investors protection from fraudulent or misleading financial statements in the absence of government disclosure regulation.

This body of literature clearly suggests that the value of "Big 8" audits may differ, in a positive direction, from the value of audits by other private CPA firms.[2]

H_4 : Audits by CPAs in private practice will have a more favorable impact than audits by state auditors. (The issue focuses on the substitution of auditors).

Since the quality of state auditors varies from state to state, while the CPA certification is established nationally, the perceived quality of an audit may also be different and will probably favor the CPA audit. Also, audits by state auditors are typically less timely which should decrease the relevance, and therefore the value of, the audit information (this idea is demonstrated by the 1976 amendments to the Federal Revenue Sharing Act which calls for an audit to be conducted at least once every three years). Recent actions by the City of Columbus to arrange an agreement with the Ohio Auditor General that independent CPAs' reports be accepted in place of auditor general activities cited this key problem of timeliness.

> . . . In addition, certain audit reports were of little value because of their untimely completion, sometimes being issued long after a subgrantee agency (the auditee) became extinct. (Dorrian, 1977, p. 51)

It should be stressed that the distinction being made between audited reports by independent CPAs and the auditor general's office is not on the basis of quality. However, due to understaffing and peak needs for staff at year end, most auditor generals feel timely audits are not possible (this idea is suggested by Mandolini et al., 1977). Since a key concern in accounting and auditing is relevance and timeliness (A Statement of Basic Auditing Concepts, 1973), it appears that the relative

value of auditor general reports would be significantly less than independent accountants' on a timely basis. Empirical evidence that external audits (compared with internal audits) result in less interest cost to municipalities is provided by Golaszewski (1977).

A recent ruling by The Independence Subcommittee of the American Institute of Certified Public Accountants' (AICPA's) Ethics Division lends further support to the idea that audit reports by state auditors and other government auditors differ from those of independent CPAs in private practice. The Division recently ruled that the City Auditor of Baltimore cannot be considered an independent auditor under the AICPA code of ethics by virtue of the fact that he is paid a salary by the governmental entity he audits. It has been suggested that this rationale would apply to state legislative auditors and to the Comptroller General of the United States. Thus the perceived difference in the level of independence of the auditor could result in a differential impact between audit reports issued by the two groups of auditors--state and other government auditors and independent private practice auditors (Bailey, 1977).

H_5 : The larger the portion of a fund "covered" by an accounting method in accordance with Governmental Accounting, Auditing, and Financial Reporting (GAAFR), the more favorable will be net interest cost and the bond rating.

The rationale for this hypothesis parallels the rationale for why "enforcement of GAAP" is a demand determinant of the audit

(the enforcement of GAAP by auditors is noted by Ijiri, 1975, p. 24). It is recognized that a confounding problem exists with H_2 since noncompliance with GAAFR may be accompanied by a qualified opinion. However, the hypotheses will be tested separately, and this issue will be examined ignoring "subject to" and similar types of qualifications unrelated to GAAFR reporting under appropriate accounting methods.

The AICPA State and Local Government Accounting Committee in its comments on the content of the Working Draft GAAFR Restatement: Introduction and Principles (comments were dated June 28, 1977) suggests no purpose is served for government to suggest its operation under special accounting principles. The AICPA further states that GAAP should be applied. The group has observed government's movement toward adoption of the complete accrual basis of accounting. The importance of the basis of accounting is also suggested by the MFOA's practice of immediately disqualifying financial reports without a statement of significant accounting policies, including the basis of accounting, from receiving the MFOA Certificate of Conformance.

If this hypothesis is supported, it will indicate the superiority of GAAFR required basis of accounting for varied accounts and investors' understanding of the difference in accounting methods will be indicated (assuming the information necessary for adjustment of the accounts for accounting differences is not available). If the hypothesis is not supported, Beaver's

discussion of the efficient markets implications, discussed under H_2 (1976), would apply. Presuming adjustments cannot be made for many of the reports at variance with GAAFR, the increased information should lead to a favorable impact on both bond rating and net interest cost.

H_6 : The audit impact is greater for those municipalities with deficits in the general fund.

The CPA serves more than a verification role, as suggested in Chapter II. As identified by the profession's pronouncements and literature, the auditor should offer advice concerning current and potential problem areas in the accounting system and other operations (e.g. budgeting and management services literature).

If the data are consistent with this hypothesis, market recognition of the usefulness of the auditor in locating problem areas and in providing advice to troubled managers would be provided. The professional value of auditors would be evidenced. Logically, a deficit problem suggests existent problem areas and a greater need for professional assistance which leads to this hypothesis. Investors may have a greater concern for problem solving help when an investment opportunity is in a deficit position.

If the data are inconsistent with this hypothesis, the market sees the audit function as providing equivalent services to communities despite their deficit/surplus status (assuming H_1 is supported). This suggests that despite surpluses, users acknowledge

the credibility value and potential efficiency value of an audit (implicitly assuming this information is utilized). Alternatively, a lack of significance for H_1 combined with inconsistency in results for this hypothesis might indicate that users do not acknowledge credibility or improvement of operations through the audit function.

There is, however, a measurement problem in testing this hypothesis which could easily explain the lack of significance of the results. Kaplan (1977, p. 3) observes that "a funds flow surplus can represent mismanagement just as a deficit is so perceived. In many instances a deficit or surplus can not even be determined because of the vagaries of fund accounting and timing differences from various revenue sources." Similarly Zimmerman (1977, p. 15) notes that "By borrowing, a municipality can be showing surpluses in the General Fund." Despite these measurement problems, it is clear that rating agencies consider a deficit in the general fund to be a warning sign of trouble. This suggests users refer to this measure and could consequently perceive more of a necessity for an audit.

H_7 : The audit impact is greater on revenue bonds than on general obligation bonds.

Differences between revenue and general obligation bonds are well established in the literature, although recent conversations with practitioners suggest the tendency to view the two instruments as being of equivalent risk. Since revenue

bonds are not ordinarily guaranteed, "but typically a system of sinking funds and operating controls is set up to assure investors that the financial affairs of the facility will be maintained in good order and all commitments honored," (Rabinowitz, 1969, p. 33) the audit may be more important for revenue bonds than general obligation bonds. Note, this distinction is not due to relative risk, but to the idea that more determinants of risk fall under the audit function. A clear problem with assessing the impact of type of bond is the existence of transfers between funds and the effect that an issuer's actions with respect to one bond issue has upon another issue. For example,

> rating agencies, uncertain about the state's willingness and ability (New York) either to stand behind the notes or to refinance them, refused to give ratings to new issues and withdrew ratings on those outstanding. (Moody's Bond Survey, 1976, p. 1765)

However, the legal structure of most revenue bonds require numerous specified expenditures before transfers to the General Fund can occur. Also there are several examples where revenue bonds have defaulted without affecting the issuer's bond ratings for general obligation issues.

H_8 : A special report from an accountant (e.g. pertaining to the mathematical accuracy of debt service), will have a favorable impact on the net interest cost and bond rating.

It is assumed that the CPA offers additional information in even limited capacities, and based on the rationale develped in

Chapter II, the additional input lowers information risk and favorably impacts bond rating and net interest cost.

H_9 : The holding of a Municipal Finance Officers Association (MFOA) Certificate of Conformance has a favorable impact on net interest cost and bond rating.

The MFOA Certificate of Conformance is a measure of financial statement uniformity, completeness, coherence, and disclosure (Mandolini _et al._, 1977). Since its inception in 1933, a little over 400 municipalities have been awarded the Certificate. Despite 18,516 municipalities being eligible, only about 100 submit applications and a little over two percent of the municipalities meet the MFOA requirements (Coopers and Lybrand, 1976). The rationale for the MFOA Certificate rests on the information value discussion in Chapter II. There is a key relationship between H_1 and H_9; one of the current requirements for an MFOA Certificate (although it was reconsidered but finally elected to remain a requirement during the past few months) is the presence of an audit by an independent CPA. However, the purpose of this test is to see if, given an audit, those municipalities with MFOA Certification have higher bond ratings and lower net interest costs than those municipalities without Certification. Finance officers of varied local government units have stated their belief that the MFOA Certificate led directly to the upgrading of their bond rating and the lowering of interest costs.

Notes

1. It is interesting to note that this distinction between smaller market users and larger market users is somewhat analogous to the Big GAAP-Little GAAP controversy in the accounting profession. If the data are consistent with this hypothesis, this may have some bearing on the current professional practice of blanket accounting and auditing (including disclosure) requirements for all entities. Smaller entities' users may have more access to or power and ability to demand needed information (Barefield, McDonald, Wallace, 1977). If the data are inconsistent with this hypothesis, it would suggest (assuming H_1 is supported) that regardless of the level of funding requirements and accessibility of the municipality to the users of the financial statements, the audit provides additional information of value. The very existence of the Big GAAP-Little GAAP controversy provides reason for testing this hypothesis. The breadth of use of financial statements may have significant effects on the importance of the statements, their contents, and their audited status.

2. This issue is of particular interest because if the audit has an impact (H_1 is supported) and H_3 shows no significant difference, then the results would suggest that the CPA designation carries weight without having to have the name of the auditor attached.

There is a potential problem with selection bias in analyzing this sample. Since there is a "package" considered by municipalities, the question of "is the 'Big 8' auditor worth it" considering audit fees and other factors may result in a negative answer, i.e. no significance may result, despite an impact by a "Big 8" auditor.

It is acknowledged that the "Big 15" audit name could be just as significant a "trademark" as the "Big 15" auditor name. The reasons for concentrating on "Big 8" firms include the familiarity of the "Big 8" firm names to the layman and the availability of a source regarding services offered to municipalities by "Big 8" firms, the Metcalf Report. However, data was collected on both the "Big 8" and the "Big 15" firms regarding their auditing of the Florida municipalities.

CHAPTER V
THE PLAUSIBILITY OF AUDIT AND FINANCIAL REPORTING EFFECTS IN THE MUNICIPAL BOND MARKET--INTERVIEW RESULTS

It is important to understand how the municipal bond market works in order to assess the potential impact of financial reporting practices and the audit function. Terminology is introduced and defined in the Appendix to facilitate an understanding of the hypotheses to be tested. Further discussion on the municipal bond market operations can be found in the literature, e.g. Rabinowitz, 1969; Sherwood, 1976; Petersen, 1974; and numerous publications by The Bond Buyer, including "Preparing a Bond Offering of a Local Government for the Market," 1962.

There are two key facets of the municipal bond market which should be noted throughout this analysis. (1) The process by which the underwriters and dealers purchase the supply of new bonds offered by local governments and reoffer them to investors may be influenced by accounting variables. (2) The impact of the political environment and the various interventions by federal and state legislative and regulatory agencies in the market has obviously involved accounting variables as already discussed with respect to disclosure legislation such as The Municipal Securities Full Disclosure Act of 1976 (S.2969).

The basic process of designing and floating a municipal bond issue is outlined in Table 4. In designing a bond issue, a municipality's objectives are to attract the attention of several underwriters to promote active competition for its bonds and to make the bonds so attractive to investors that they will want to buy and hold the securities.

The key participant in the design of a bond issue is the financial consultant. The role of the financial consultant was summarized for the Joint Economic Committee (Guastella, 1966, Exhibit).

(a) Surveys issuer's debt structure and financial resources to determine borrowing capacity for future capital financing requirements.
(b) Gathers all pertinent financial statistics and economic data such as debt retirement schedule, tax rates, overlapping debt, et cetera that would affect or reflect on the issuer's ability and willingness to pay back its obligations.
(c) Advises on the time and method of marketing; terms of bond issues; including maturity schedule, interest payment dates, call features, and bidding limitations.
(d) Prepares an overall financing plan detailing the recommended approach and probable timetable.
(e) Prepares, in cooperation with bond counsel, an official statement, notice of sale, and bid form and distributes same to all prospective underwriters and investors (red herring first and then the final official statement).
(f) Assists the issuer in getting local public assistance and support of the proposed financing.
(g) Keeps in constant contact with the rating services to insure that they have all the information and data they require to properly evaluate the credit.

Table 4
The New Issue Market Process

STEPS	
1.	CITY DETERMINES NEED FOR BOND ISSUE
2.	Financial Consultants Bond Counsel Consulting Engineers ALL ASSIST IN THE DESIGN OF THE ISSUE
3.	THE PRELIMINARY PROSPECTUS COPIES ARE CIRCULATED
4.	NOTICES OF SALE ARE REPORTED IN *THE BOND BUYER'S* CALENDAR OF SEALED BID OPENINGS (DAILY PUBLICATION)
5.	FACTORS ANALYZED BY UNDERWRITERS: Reserve Statistics and Money Market Statistics (Published in *The Bond Buyer*) Bond Rating, Reoffering Yields (Scales), Form of the Bond: General Obligation or Revenue Bond, Nature of the Serial Bonds, Call Provisions, and Bond Quality are all considered by underwriters
6.	FORMATION OF SYNDICATES (frequently) a. "LOCK-UP" MEETING b. DETERMINATION OF BID FACETS OF A BID: Coupons, Net Interest Cost, Spreads
7.	ISSUE OF BONDS Official Statements are circulated

(h) Is present when sealed bids are opened and stands ready to advise on the acceptability of bids.
(i) Supervises the printing, signing, and delivery of the bonds.
(j) Advises on investment of bond proceeds.

The above description of the consultant's role suggests numerous questions about the auditor's role. It is clear that an auditor could be instrumental in completing tasks a, b, d, e, and g which are outlined for the financial consultant. Yet the municipal market literature tends to ignore the role of the CPA as an important financial advisor. This lack of literature recognition is carried forward into practice. This is clear from the relative absence of the CPA firm's name in the front cover of official statements where professional advisors including the bond counsel, consulting engineers, financial consultants, and the investment banker are listed. It would appear that increased overt reference to a municipality's auditor would lend credibility to financial data included in the official statement; in fact, the absence of complete financial reports and audit report in the official statement is puzzling. In the past "very few official statements had contained audited financial statements of the municipality" (Kerley, 1977, p. 7). In addition, a double standard based on issue size exists.

> . . . (Need) for disclosure still varies drastically according to who wins your bonds at the bond sale. Some bidders, for example, whom you would expect to accept your offer to furnish copies of the final statement for delivery to their customer

> along with the sales invoice, request none. This obviously raises serious questions in the mind of the issuer, who is paying the bills.
>
> On the other hand, if you do not make such arrangements, then the more disclosure-minded bidder will probably refuse to bid. (Kerley, 1977, p. 7)

More disturbing, however, is that the dissemination of information is hampered by the fact that most municipal bonds are sold as bearer bonds. Since the identity of the bondholders is not usually known, they do not receive unsolicited annual financial reports (Forbes and Petersen, 1976). Based on discussions with personnel in municipality offices who handle the mailing list for annual reports out of a distribution of reports approaching 200 only 4 individual investors were represented on average, with most recipients being related to the auditee, political participants, bond raters, investment bankers, and newspapers. Based on personal requests for financial statements it would appear that they are not that easy to obtain nor are they provided in a timely fashion. Numerous municipalities said they did not have extra copies of prior year audit reports, although the reports were available for inspection at the municipality's City Hall. While the underwriters may be able to easily obtain financial statements directly from the issuer, it is questionable whether the final investor could easily obtain this same data which leads to some loss of the potential favorable impact of the conduct of an audit at the ultimate investor level. Based on discussions with usual recipients of preliminary prospectuses

they were unaware of the differences in reporting between the preliminary and official statements for some issuers as well as the general tendency to place condensed financial information in the official statement. It appears plausible that inclusion of complete financial statements with the auditor's report in official statements could enhance the credibility of the municipality and subsequently lead to lowered net interest cost and higher bond rating.

A second issue concerns the level of use of the expertise and information resource represented by the auditor. The concepts of "timetable" and "constant contact with the rating services" to ascertain that adequate information is available suggest a useful role for the auditor. Perhaps through direct correspondence between the auditor and bond raters or similar professionals involved in a bond issue, the quality of disclosure and the speed and efficiency of the bond rating and similar investigative processes could be enhanced. This too appears to be a plausible impact of the auditor on the municipal bond market.

An additional benefit of including the audit report in the official statement is the provision of assurance that Governmental Accounting, Auditing, and Financial Reporting (GAAFR) has been followed (the recent revenue sharing act discussed earlier includes a provision that the opinion must say that the financial statements are in accordance with generally accepted accounting principles as set forth in GAAFR (Audit, 1977)). By assuring

users of financial statements of their comparability, the information provided is increased and according to the value of information discussion presented in Chapter II an impact on net interest cost and perhaps bond rating could be expected.

The benefits that accountants and auditors can provide a municipality relate to the factor of bond quality, listed as a consideration by underwriters in Table 4. It is this factor of bond quality that is the primary concern in this study. It is hypothesized that financial reporting practices and audit opinions impact the quality of a bond and result in lowered interest cost and higher bond ratings for issuers of municipal bonds.

In Chapters V, VI, and VII evidence collected pertaining to the hypotheses developed in Chapter IV will be presented. However, the direct relation of this evidence to individual hypotheses will not be discussed until Chapter VIII. The purpose of applying three research approaches is to obtain validation of the research results by determining whether there is convergence of evidence from the three approaches. Such convergence will aid in evaluating the strength of the research findings and conclusions drawn concerning the hypotheses.

Interviews were conducted with local government officials, faculty who are active in municipal affairs, lawyers, underwriters, accountants, professional staff members of the auditor general's office, and bond raters. These interviews provided the expertise

and insight necessary to formulate the questionnaire which is presented and discussed in Chapter VI. They also provided information on the plausibility of accounting and audit variables identified in Chapters II, III, and IV having an impact on bond rating and net interest cost.

Interviews with representatives of three different bond rating firms (the representatives were at the vice-president level of the municipal bond rating department) and review of the bond rating companies' literature provided insight into factors considered important by bond raters in their evaluations of issues, opinions concerning current events in the municipal area, and from experience in a variety of areas. Table 5 summarizes these factors and comments. It is clear from a review of the points made in the Table that the audit and financial reporting practices are important influences on municipal bond rating.

Table 5
Factors and Comments Related to Accounting and Audit Practices and Their Influence on the Bond Rating Process

I. Bond Raters' Analysis Sheets

In addition to normal demographic statistics reported in the literature, information is coded regarding

A. The Accounting System
B. The Auditor
C. Pending Litigation
D. General Fund Deficit Balance
E. Current Year Operating Deficit (in fact, this is noted as an "early warning guideline")

Table 5 - continued

F. Current Rating Change Forms Request Documentation such as the audit as evidence and support for the rating change.

II. Characteristics of Information Collected

If information requested for an annual review of a municipality's bond rating is not made available in a reasonable period of time, the rating companies reserve the right to withdraw their quality rating of outstanding debt.

The rating companies are routinely placed on a municipality's mailing list for annual reports.

Fees for bond ratings ($600 to $15,000 depending on the firm) are determined by the amount of work and time involved in evaluating an issue; this suggests the better the formal disclosure practices, the less the direct cost of the rating. In an interviewee's words, "The more information the better."

However, the pendulum may have swung to an extreme point in some cases. Examples were offered of a State of New Jersey issue which originally submitted four pages of disclosures and data to the prospective underwriters. Smith Barney, Harris Upham & Co., Incorporated agreed to bid and accept it if more information was provided--80 pages were submitted. Similarly, a state prisoner's suit against the State of New Jersey (Superior Court, Law Division, Docket No. 1-7025-75) for $17,958,968,735,470 was disclosed as "unpredictable" legislation.[a]

"It is not our function to conduct a full scale audit of a municipality's financial records or other information provided by municipal officials. . . . We are permitted to rely on the validity of the information we receive from government officials,"[b] was a statement by Howard Hosbach, executive vice-president, Standard & Poor's Corporation in response to the SEC Report on New York City's Bond Ratings. Such a defense suggests the usefulness of an auditor's report to the bond rating agencies.

All of the bond raters request at least two years of annual reports. One requires certified audits for the three years prior to an issue. Another stated that last year's audit must be available, but

Table 5 - continued

recognized a timeliness problem (printing was cited as requiring from June to November). One bond rater stated that City Controller and Director of Finance reports were acceptable. Regarding government audits, the following quote from a letter received by the bond rating firm was shared:

> In reply to your letter of January 12, 1976, please be advised that the auditing for the district school board is conducted by the auditor general's office and that an audit has not been done for the past two years. We shall be happy to send you a copy of our next audit report as soon as it is made available to us at the conclusion of our next audit.[c]

Despite the stated audit requirements, throughout the literature for the rating firms the presence of qualifying phrases like "if existing" and "or" annual reports suggest flexibility. However, the statement was made that under present conditions the lack of any audit is definitely detrimental to the point that the city might not receive a bid.

Also regarding auditor general reports, the quality of state auditors was stated to vary greatly; for example, in Wisconsin the auditor general tends to perform all of the audits while more than 50% of the states have no audit requirements. It was acknowledged that state auditors' reports are less timely than private independent auditors' reports.

Different sections of the country differ so greatly that most analysts concentrate on a certain area. As an example of issues unique to a state, copies of speeches delivered by bond rating company professional staff were obtained regarding Texas and Florida considerations, e.g. Florida's tourism and its unemployment problems.

The use of comfort letters grew approximately 50% following the New York incident. About 10% of municipalities supply them. They have a positive influence on the bond rating.

Table 5 - continued

III. Auditor Characteristics--National Reputation

Many auditors do as good a job as the "Big 8" but some small firms do lousy audit jobs. A type of "black list" does exist on auditors in individual rating officers' minds (and the rating firms are very aware of which CPA firms are having litigation in the municipal area and corporate sectors). Interviewees recognized a leaning toward the "Big 8" firms. They also stated that certain firms specialize and do a particularly good job in a specific area, for example feasibility reports on hospitals. It is recognized that the audit selection is influenced by politics, particularly with small municipalities, but it is noted that use of a local auditor may lower cost. However, benefits were cited for having a "Big 8" firm. It was stated that it was easier to get an answer with more credibility being perceived and more professionalism demonstrated in working with a "Big 8" firm. The "Big 8" firms tend to make it easier to speed up a rating. There is obvious disagreement on the value of a "Big 8" firm as demonstrated in the statement "reputation has no impact on competence." We look at the document. We are often asked about the "Big 8" firms and Investment Bankers say it matters, but it does not affect rating.

IV. Rating Committees and Education of Raters

Rating committees include a number of analysts (e.g. officer, senior officer, rating analyst, and rating specialist) besides the examining analyst and frequently one question addressed during formulation of ratings is the nature of the audit opinion. These meetings can last one-half hour or up to two or three days.

For training of new bond raters Rabinowitz (1969) and MFOA material are utilized extensively along with an apprenticeship approach. . . . each top analyst is assigned two or three trainees.

Rating staff's total size approaches thirty and the education level tends to include an MBA or MPA, i.e. Master's in corporate or public finance or another advanced degree in a related field or a minimum of three years of experience in supervisory and management skills in order to qualify as a rating officer. In

Table 5 - continued

one large firm interviewed, 50% of the bond raters had master's degrees and two of these had accounting backgrounds with one individual who was an auditor.

Not only has the education level of the bond rater increased over the years, but the comment was made that bond raters have noticed more educated representatives being sent by the municipalities, as opposed to politicians, to represent the new issue.

V. Information Reported By the Rating Companies

Included in credit reports on municipalities is a section on financial reporting which reports the presence of an audit, the accounting method used (e.g. modified accrual), and related matters such as the presence of a MFOA Certificate and the timeliness ("promptness") and completeness of reporting and budgeting. The use of an auditor or other CPA for a management services engagement, e.g. "Coopers & Lybrand, feasibility consultant," is often mentioned. (See the S & P Fixed Income Investor, Moody's Municipal Credit Report, and the Fitch Municipal Bond Reports for examples of these disclosures.)

In discussing a refund program, bond raters' reports will often include expression of the municipality's intention to obtain "a nationally recognized CPA" to verify the accuracy and adequacy of cash flow in the escrow account.

In evaluating state issues in municipal credit reports, the results of state auditor general audits including qualifications in the report, internal control suggestions, and the auditee's response to these suggestions are often summarized. If the auditor general's suggestions are not followed there is an implication that the municipality has poor management.

Financial statement data which is present in bond raters' publications is noted to be unaudited or audited.

Table 5 - continued

Due to users' demand, the Municipal Credit Report of Moody's has recently been revised and will begin to list consultants including CPAs.

VI. Miscellaneous Comments Related to Issues Raised in the Literature

A default in one revenue bond would tend to affect other revenue bonds.

General obligation ratings have fallen as revenue bonds' ratings have increased, i.e. now the two types of issues are instruments of similar risk.

Net interest cost is not the concern of the bond raters.

The primary reason for numerous issues on the same date is to keep funds separate as opposed to the marketability issue (although it is true that supply of bonds in the market affects the success of an issue.)

"Integrity of funds" is desired; however, a phone call to the auditors often supplies an acceptable reason for the transfers made. Transfers between funds are not suggested was one interviewee's response, while another stated it was "not usually" suggested.

Default is about 2%; it is less than 2% for triple A bonds and the A or BBB categories dominate default experience. This indicates the increasing importance of raters offering more than default information; the recent redefinition of bond ratings by Standard & Poor's to cover both the corporate and municipal bond issues is indicative of the two markets' increasing similarities in secondary market emphasis.

Ownership of a municipal utility is an advantage to a city in terms of its bond rating. However, the management of the utility influences how much of a favorable impact upon bond rating that ownership will have.

Since raters have an ongoing contract with the issuer, if a qualified opinion was released, the rater would contact the auditor for clarification, if material.

Table 5 - continued

Florida is very unique due to less reliance on unlimited General Obligation Tax Bonds. Pledging Special Taxes is preferred, e.g. utility tax, franchise tax, and paramutual proceeds. Special tax emphasis also holds in New Mexico, Colorado, Arizona, Alabama, and Georgia.

A very common clause in all states' revenue bond covenants is the requirement of an independent audit (and has been since at least 1959). (Although not suggested by the interviewees, perhaps this has contributed to the relative upward shift in bond rating for revenue bonds.)

Investment bankers say audits are important.

The rating firms closely follow disclosure legislation as evidenced by interviewee's discussion and mailing of specific news articles related to accounting disclosure matters, for example The Daily Bond Buyer's account of the Rinaldo Bill and Murphy Bill on October 7, 1977. However, disagreement with SEC regulation was expressed despite a desire for increased disclosure levels.

Note: [a]B.W. Harries, President, Standard & Poor's Corporation, "Credit Problems in the Municipal Market," a speech presented at the Fourth Public Finance Conference, Los Angeles, California (February 11, 1977), p. 11.

[b]"S & P Replies to the SEC Report on New York City's Bond Ratings," McGraw-Hill News (September 9, 1977), p. 1.

[c]H.C. Grossman, Vice-President, Standard & Poor's Corporation, "Standard & Poor's Looks at Florida Municipal Credits," presentation to Florida Bankers Association, Investments Seminar, Orlando, Florida (February 4, 1976).

The basic points summarized in Table 5 were supported in comments by other professional groups interviewed. An attorney offered a different perspective on what constituted key components of the net interest cost for a municipality.

The attorney stressed that the legal structure of the issue (how it is "put together," including what kind of indenture the issue has) is an important determinant of net interest cost and the bond rating. For example, the integrity of funds is an important indenture element in addition to protection against dilution. The interviewee echoed the raters' reports that the traditional concept of revenue bonds being more risky than general obligation bonds is no longer true. He explained that revenue bonds are easier to analyze due to discrete funds flow; plus, generally it is easier to raise rates of utilities than to raise taxes. The attorney also stressed the current money rate as an important determinant of net interest cost.

In the lawyer/underwriting setting the comment was made by an interviewee that the audit is very important and an example was provided of New York State's Urban Development Corporation's Official Statements from inception to bankruptcy. The notes and the audit opinion progressively got worse as itemized in the following figures:

$250 million 1/20/71 A Moody rating; AA S & P rating
Net Interest Cost 6.38%

$150 million 7/5/72 A Moody rating; A S & P rating
Net Interest Cost 6.0%

$200 million 5/15/73 A Moody rating; A S & P rating
Net Interest Cost 6.5%

$100 million 12/73 BAA1 Moody rating; A S & P rating
Net Interest Cost 7.0%

$100 million 9/74 BAA1 Moody rating; BBB S & P rating
Net Interest Cost 9.38%

The lawyer suggested that the increased net interest cost and lowered bond ratings resulted from the information communicated at least in part by the audit report and notes to the financial statements. This attorney stated that the audit is important to all parties when conducted on a general obligation bond issue.

Discussions with other experts combined with the ideas of the bond raters clearly suggest that the presence of an audit, the type of qualification in an opinion, conformance with GAAFR, and the nature of the state audit are considered in determining bond ratings and may also impact net interest cost. Review of attorneys' files regarding the formulation of indenture agreement and the submission of bids suggests many bidders require a "recognized CPA" to report an adequacy of debt service as part of the requirements for bid acceptance. MBIA insurance is predetermined by the municipality and then, in turn, reflected in lower bids on a given bond issue. Indenture agreements' provision relating to the independent audit suggests the importance of this financial reporting attribute to professionals in the municipal bond market.

To summarize some of the more important issues, it is clear that traditional theory relating to the relative risk of revenue and general obligation bonds needs adjustment. It appears that bond raters do have direct contact with auditors as an information source, particularly regarding clarification of qualifications on audit reports and explanation of why transfers between funds have

taken place. In general the national status of the auditor is not stressed. The state auditor is valued, but the timeliness problem is very real. The role of MBIA (Municipal Bond Insurance Association) and AMBAC (American Municipal Bond Assurance Corporation) coverage was clarified. Unless an issue can qualify for at least a BBB Standard & Poor's municipal rating without insurance, there is no rating guarantee which is applicable by purchasing insurance; however, if the municipality could qualify for a BBB without insurance, purchase of insurance results in an AAA rating with MBIA coverage and an AA rating with AMBAC coverage from S & P. Hence there are limitations, but the tendency would be to improve the average bond rating. The raters other than S & P have no automatic adjustment of the bond rating.[1]

Internal control reports are seen as a useful communication device. The MFOA Certification is not cited as improving the bond rating by the rating analysts. The benefit of an audit is acknowledged and some regulation is suggested by professionals, although most oppose the SEC intervention.

While not directly related to municipalities, an interview with a colleague completing research in the area of the audit report made it clear that standard loan agreements of medium sized banks, sometimes specify that the bank has approval of the auditor selection and that the audit opinion can contain no opinion qualification unacceptable to the bank. With general

creditors making these types of requirements it does not appear unreasonable to suspect that similar demands of municipalities could be made by investment bankers.

Notes

1. "Estimated Interest Cost Savings from Using AMBAC/MGIC Indemnity Corporation Insurance on New Issues of BBB and A Rated Municipal Bonds," American Municipal Bond Assurance Corporation (July 15, 1977) attempts to quantify the net interest cost reduction directly attributed to MBIA coverage, suggesting such insurance (including AMBAC coverage) is an important determinant of municipality issue costs. There is a suggestion that as time passes and the bond payment insurance earns for itself the recognition and appreciation "it deserves," the economic justification for its general utilization will become even more convincing. Regarding this study, based on inspection of AMBAC coverage of municipal bonds, no Florida issues were covered from 1974 to 1976, hence this study will focus entirely on MBIA insurance coverage in analyzing net interest cost and bond rating impact.

CHAPTER VI
ANALYSIS OF QUESTIONNAIRE DATA

In addition to the interviews with bond raters, underwriters, auditors, attorneys, and finance officers, an opinion survey was completed in an attempt to determine how the role of financial reporting practices is perceived by varied professional groups working in the municipal area. The questionnaire was mailed to underwriters and investment bankers, attorneys, CPAs, educators, municipal finance officers, bond raters, and rule-makers.

Development of the Questionnaire

A questionnaire was formulated and distributed to several bond raters, investment bankers and underwriters, and lawyers in a pilot study to obtain information on the reasonableness of the questionnaire (especially regarding length) and to obtain suggestions on how the questionnaire might be improved. From a distribution of twenty questionnaires eight responses were received. Respondents' suggestions were incorporated. Drafts of the questionnaire were reviewed with colleagues, including a marketing and a psychology professor. The interview sessions discussed in Chapter V also contributed toward improving the quality of the questionnaire. Table 6 presents the questionnaire

circulated to professional groups. It should be noted that the actual questionnaire was printed on the University of Florida School of Accounting letterhead, included the author's signature, and took the form of a pamphlet, i.e. two $8\frac{1}{2}$ by 11 pages were printed on the front and back with a fold on the left side. In distributing the questionnaires printed self-addressed stamped envelopes were enclosed and the University of Florida School of Accounting envelopes were utilized for mailing. Note in Table 6 that there are four versions of the final page of the questionnaire to facilitate collection of demographic data on each professional group sampled. Labels have been added to the table to identify which group received each of the final questionnaire pages.

Sample and Response Rate

The questionnaire was mailed to the following groups:

(1) The Special Review Committee for the Municipal Finance Officers Association of the United States and Canada (sixteen including four private practice CPAs, six finance officers, one academician, and other government related professionals);
(2) The National Council on Governmental Accounting (seventy-six including seven from sample 1) (NCGA);
(3) The Florida Institute of CPAs Committee on Relations With State and Local Government (thirteen members) and The Texas Water District Audit Manual Committee for the Texas Society of CPAs (six members);
(4) A member of each of the "Big 15" firms;
(5) Florida CPAs auditing the municipalities in the sample, as identified from the available annual reports (forty-three);
(6) A sample of Texas CPAs based on the inspection of annual reports for municipalities which were available (Texas was sampled primarily due to the

Table 6
Questionnaire Mailed to Professionals in the Municipal Area

Wanda A. Wallace
October 24, 1977

Dear Respondent:

The recent attention in the press and financial literature regarding the revision of Governmental Accounting, Auditing, and Financial Reporting (GAAFR) suggests a need to examine financial reporting practices in the public sector. It has been suggested that both the financial reporting practices of a municipality and the nature of the audit process may have an impact upon the way in which municipal financial statements are used.

The purpose of this questionnaire is to determine how the role of financial reporting practices is perceived by varied professional groups working in the municipal area. This questionnaire is being mailed to underwriters, investment bankers, raters, and rule-makers. The opinions of these various interest groups will be compared and the results will be communicated to decision makers in the municipal area. It is important that insight be gained concerning those issues in the municipal area that affect decision makers in the municipal area on a daily basis. This questionnaire is one means of learning about financial reporting practices in the municipal area.

Your cooperation in completing this questionnaire will help clarify the rule-makers' and decision makers' understanding of the role, utility, and relative importance of financial reporting practices.

Thank you for your time.

Sincerely,

Wanda A. Wallace

Ph.D. Candidate
University of Florida

Table 6 - continued

Part I. Indicate the impact or lack of impact of the following upon net interest cost (interest rate) and the bond rating of municipal securities using the following code:

1 = significant favorable impact
2 = little favorable impact
3 = no impact
4 = little unfavorable impact
5 = significant unfavorable impact
6 = no opinion

Please circle the appropriate answer relating to Interest Cost/Bond Rating.

EXAMPLE: If you think a variable has a significant favorable impact on interest cost and no impact on bond rating, you would respond as noted.	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
1. An audit by independent CPAs in private practice as contrasted with no audit	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
2. An audit by the auditor general's staff, i.e. auditors employed by the state as contrasted with no audit	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
3. A qualified audit opinion as contrasted with a clean audit opinion	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
4. A qualified audit opinion as contrasted with no audit opinion	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
5. An audit by a "Big 8" auditor as contrasted with a local or regional auditor	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
6. Ownership of the public utility by the municipality	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
7. Special reports from a CPA (e.g. a report on the mathematical accuracy of debt service requirements)	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
8. Receipt of a comfort letter (i.e. negative assurance) by the underwriter and/or attorney	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6

Table 6 - continued

9. Conformance with Governmental Accounting, Auditing, and Financial Reporting (GAAFR)	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
10. Membership in the National Alliance of Financially Responsible Local Governments	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
11. "Other experts" such as engineers and bond counsel which have a national status as contrasted with "local experts"	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
12. MBIA or AMBAC insurance (Consider only Moody's Bond Raters)	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
13. Municipal Finance Officers Association (MFOA) Certificate of Conformance	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
14. Legal structure of the bond indenture agreement	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
15. Exceptions with GAAFR due to compliance with local or state statutes as contrasted with other exceptions	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
16. An audit by both an independent CPA and the auditors appointed by the state as contrasted with an audit by an independent CPA only	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6
17. The use of any nationally known auditor as contrasted with a local or regional, relatively unknown independent CPA	1 / 1	2 / 2	3 / 3	4 / 4	5 / 5	6 / 6

Table 6 - continued

Part II. Describe your reaction to the following statements by using the following code: 1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Do Not Agree 5 = Strongly Disagree 6 = No Opinion

PLEASE CIRCLE THE APPROPRIATE ANSWER.

1. Specific statements on internal control issued by auditors would be useful reports in the municipal area.	1	2	3	4	5	6
2. Underwriters or investment bankers normally require a national auditor for municipality audits.	1	2	3	4	5	6
3. Underwriters or investment bankers normally require that they have approval over the auditor for the municipality.	1	2	3	4	5	6
4. The importance of an audit to a municipality with a deficit in the general fund is no different from the importance of an audit to a municipality with a surplus.	1	2	3	4	5	6
5. Bond raters obtain information from audit firms.	1	2	3	4	5	6
6. Private CPA firms are interested in increasing their municipal audit clients.	1	2	3	4	5	6
7. State auditors tend to perform audits in a timely fashion.	1	2	3	4	5	6
8. There is a need for both the auditor general's staff (state employed auditors) and the independent CPA.	1	2	3	4	5	6
9. State employed auditors investigate municipalities' compliance with state and local legislation for legislators more than they assist the individual investor.	1	2	3	4	5	6
10. The auditor general's staff has similar qualifications to the independent CPA and his staff.	1	2	3	4	5	6
11. Underwriters obtain information from audit firms.	1	2	3	4	5	6
12. The effect (impact) of an audit and of accounting practices on the bond rating of municipalities is no different from the impact on counties.	1	2	3	4	5	6

Table 6 - continued

13. The impact of a qualified opinion on interest cost is dependent upon the type of qualification.	1	2	3	4	5	6
14. The assessed versus actual property ratio is higher for municipalities owning utilities than municipalities with privately owned utilities.	1	2	3	4	5	6
15. The use of a national auditor results in more promptness in obtaining a bond rating than use of a regional or local auditor.	1	2	3	4	5	6
16. Revenue bonds are more risky than general obligation bonds.	1	2	3	4	5	6
17. Transfers between funds occur frequently, i.e. between revenue funds and general obligation funds.	1	2	3	4	5	6
18. Bond raters encourage municipalities to prevent default through transfers between funds.	1	2	3	4	5	6
19. Investment bankers obtain information from audit firms.	1	2	3	4	5	6
20. The increase in proceeds due to the audit function exceeds the cost of having an audit.	1	2	3	4	5	6
21. Audited financial statements should be mandatory for all municipalities, i.e. the SEC should require an audit.	1	2	3	4	5	6
22. A default with a revenue bond issue will mean an immediate downgrading of the bond rating for other issues of that municipality, including general obligation issues.	1	2	3	4	5	6
23. If there was a local office for a "Big 8" firm in a municipality, it would be selected as the auditor in preference to other local auditors or regional auditors.	1	2	3	4	5	6
24. The legal structure of bond indenture agreements of municipalities differ greatly.	1	2	3	4	5	6

Table 6 - continued

25. The use of "Big 8" auditors by a municipality increases the number of bids submitted on a bond issue relative to the number of bids submitted to municipalities utilizing regional and local auditors.	1	2	3	4	5	6
26. The selection of an independent auditor for a municipality is a political process.	1	2	3	4	5	6

(This section of the questionnaire was changed per group sampled; the remainder of this page was mailed to underwriters and investment bankers.)

DEMOGRAPHIC DATA: Please check the appropriate blanks.

The total dollar transactions of your firm on an annual basis are
(1) _____ Under \$500,000
(2) _____ Between \$500,000 and \$1,000,000
(3) _____ Between \$1,000,000 and \$5,000,000
(4) _____ Over \$5,000,000

The percent of total annual dollar transactions dealing with municipality and county bonds is:
_______%. (Please specify the estimated percentage.)

The title of my position in the organization is ____________________

_________________________, which I have held ____________ years.

On a scale from 1 to 7, with 1 representing top management, please complete the following: I am a member of ________ level management.

My experience in the underwriting and purchasing of municipal bond area is for
(1) _____ Less than 3 years
(2) _____ 3 to 5 years
(3) _____ 5 to 10 years
(4) _____ Over 10 years; please specify number: ____ years

My education includes: (Please X as many as are applicable)
(1) _____ Less than a Bachelor's Degree
(2) _____ Bachelor's Degree; Please indicate major: ________
(3) _____ Master's Degree; Please indicate major: __________
(4) _____ Other PLEASE DESCRIBE (Include relevant professional certification):____________________________________

(More space was allowed on the actual questionnaire and the following statement appeared at the bottom of the page: Any additional comments may be written in the space provided below.)

Table 6 - continued

(This section of the questionnaire was mailed to CPAs.)

DEMOGRAPHIC DATA: Please check the appropriate blanks.

The annual total billings of your firm are
(1) _____ Under $100,000
(2) _____ Between $100,000 and $500,000
(3) _____ Between $500,000 and $1,000,000
(4) _____ Between $1,000,000 and $1,500,000
(5) _____ Over $1,500,000

The percent of total annual billings related to municipalities or county governments is:

_____ %. (Please specify estimated percentage.)

The organizational level of my position is
(1) _____ Junior
(2) _____ Senior
(3) _____ Manager
(4) _____ Partner

My experience in auditing and working in a CPA capacity with municipalities has been for
(1) _____ Less than 3 years
(2) _____ 3 to 5 years
(3) _____ 5 to 10 years
(4) _____ Over 10 years, please specify number: _____ years

My education includes: (Please X as many as are applicable)
(1) _____ Less than a Bachelor's Degree
(2) _____ Bachelor's Degree; please indicate major: _____
(3) _____ Master's Degree; please indicate major: _______
(4) _____ Other PLEASE DESCRIBE (Include relevant Professional Certification such as CPA and MFOA (Municipal Finance Officers) membership:

____

____

____

Any additional comments may be written in the space provided below.

____

____

____

____

Table 6 - continued

(This section of the questionnaire was mailed to attorneys, NCGA--except those who were finance officers or CPAs--and academicians and bond raters.)

DEMOGRAPHIC DATA: Please check the appropriate blanks.

If applicable, the total dollar transactions of your firm on an annual basis are
(1) _____ Under $100,000
(2) _____ Between $100,000 and $500,000
(3) _____ Between $500,000 and $1,000,000
(4) _____ Over $1,000,000

The percent of total annual dollar transactions dealing with municipality and county bonds is

______ %. (Please specify the estimated percentage.)

The title of my position in the organization is ____________________ ________________________________, which I have held ________ years.

On a scale from 1 to 7, with 1 representing top management, please complete the following: I am a member of ________ level management.

My experience in serving as an attorney for municipalities is for
(1) _____ Less than 3 years
(2) _____ Between 3 to 5 years
(3) _____ Between 5 and 10 years
(4) _____ Over 10 years, please specify number: ______ years
(5) _____ NOT APPLICABLE: I am not an attorney, but I interact with municipalities in the following capacity (Please specify, including duration of activity): ____
____
____

My education includes: (Please X as many as are applicable)
(1) _____ Less than a Bachelor's Degree
(2) _____ Bachelor's Degree; please indicate major: ________
(3) _____ Master's Degree; please indicate major: __________
(4) _____ Other PLEASE DESCRIBE (Include relevant professional certification, including CPA, Municipal Finance Officers Association membership (MFOA), and National Council on Governmental Accounting): ______
____

Any additional comments may be written in the space provided below.

Table 6 - continued

(This section of the questionnaire was mailed to finance officers.)

DEMOGRAPHIC DATA: Please check the appropriate blanks.

The official title of my position is ______________________________,
which I have held _________________ years.

My work experience includes (Check as many as are applicable):

_____ Employee of "Big 8" CPA firm; duration _____ years
Experience with local municipal accounting: YES____ NO____

_____ Employee of a CPA firm other than the "Big 8"; Duration ___yrs.
Was this a firm in the "Big 15" but not in the "Big 8"?
YES_____ NO _____ Experience with local municipal accounting:
YES _____ NO _____

_____ Industry Positions (Non-CPA, non-governmental);
Duration _____ years Specify type of work: ________________

_____ Employee of State Auditor General: Duration _____ years
Specify type of work: ____________________________

Was your current employer aware of your skills for your current position from earlier contact as an outside auditor?
YES _____ NO _____

Certification and Memberships (Check as many as are applicable)

(1) _____ I am a Certified Public Accountant
(2) _____ I am a member of the Municipal Finance Officers Association (MFOA)
(3) _____ Other (Please specify) ____________________________

My education includes: (Please X as many as are applicable)

(1) _____ Less than a Bachelor's Degree
(2) _____ Bachelor's Degree; please indicate major: ____________
(3) _____ Master's Degree; please indicate major: ____________
(4) _____ Other (Please specify): ____________________________

I am currently affiliated with a (check one):

(1) _____ Municipality
(2) _____ County

Any additional comments may be written in the space provided below.

availability of addresses and names of CPAs working in the area of municipal bonds and for the purpose of having increased representativeness by the inclusion of two states in the sample.);

(7) The following samples were drawn from The Bond Buyer's Directory of Municipal Bond Dealers of the United States, 1977 Spring edition:
   (a) All Florida municipal bond attorneys listed (twenty);
   (b) All municipal bond attorney firms listed for New York (ten);
   (c) All Texas municipal bond attorney firms listed (eleven);
   (d) All finance officers listed for Florida and Texas;
   (e) All firms listed under New York, N.Y. as investment bankers for which an underwriter or municipal bond researcher is named or an "established national firm" which does not report such detail but is known to handle some Florida issues;
   (f) An investment banker from each city in Texas for which financial reports were available;
   (g) All municipal finance consultants;

(8) All Florida investment bankers listed in a 1976 edition of The Directory of Municipal Bond Dealers;

(9) All finance officers for cities and counties represented in the Florida sample;

(10) An academician who has written a leading text in the area of government accounting;

(11) Bond rating companies;

(12) Finance officers listed in a directory of finance officers in Florida which were not included in earlier sampling groups; and

(13) Municipal insurance company analysts.

The groups sampled fall into four major groups. The level of circularization and the corresponding response rates are provided in Table 7 (note that CPAs and finance officers sampled through the NCGA are reclassified as CPAs and finance officers for all of the analysis).

Table 7
Questionnaire Sample and Response Rate

	NCGA, Attorneys, Academician, MFOA, Raters, Insurance	Underwriters & Investment Bankers	CPAs	Finance Officers
Distribution:	46 attorneys 60 NCGA & others 106	167	105	110
Responses:	6 attorneys 33 NCGA & others 39	40	46	31
Response Rate:	13.04% attorneys 55.0 % NCGA & others or 36.79% for group	23.95%	43.81%	28.2%

Note: The above figures were computed and analysis conducted prior to receipt of 4 additional finance officer questionnaires, an underwriter reply, a CPA reply, and an attorney reply, increasing the response rates to 31.82%, 24.55%, 44.76%, and 37.7% for the Finance Officer, Underwriter, CPA, and Attorney groups respectively.

As evident from the levels of distribution, it was expected a priori that underwriters' responses would be lower, therefore a greater number of questionnaires were circularized. This expectation was based on (1) the diverse backgrounds of underwriters and investment bankers, (2) large differences in the size of firms sampled in Florida and Texas, and (3) the inclusion of several branch offices of a single firm in the sample could very likely decrease the response rate for those firms with the policy of sending questionnaires to "home office" for completion. Regarding #3, this same effect held for CPAs, per discussion with the main offices of a few of the larger firms. Thus, the true

response rates are actually higher than reported for the CPA and investment banker groups. Attorneys were expected to respond at a lower level due to the limited number of such professionals in the municipal area and due to the varied expertise levels for attorneys sampled. Also, the "home office" firm policy can also apply to the law firms; based on discussions with attorneys, several firms would have the policy of only completing one questionnaire per firm. Since the twenty questionnaires circulated in Florida related to five law firms, it is reasonable to view the response rate as 19.4% for the attorney subgroup.

The finance officer response rate was lower than anticipated. Based on phone conversations with several of the finance officers sampled, the questionnaire either "would be completed eventually" or was discarded due to inadequate staffing making it difficult to complete required government forms, let alone any additional questionnaires. It appears that distribution of questionnaires at the end of October and beginning of November was too close to the calendar year-end to obtain optimal cooperation from the municipal representatives.

There is no reason to believe that a difference exists between respondents and nonrespondents in any group sampled, except to acknowledge that their levels of knowledge, interest, and professionalism regarding the issues addressed in the questionnaire could reasonably be considered slightly higher than nonrespondents.

Demographic data will be examined for the respondents as a means of assessing how representative of the population the groups appear to be regarding such characteristics as education level and experience in the municipal area.

Individual Question Analysis

The frequency count for the replies per question for each group sampled is presented in Table 8. The coding zero means the question was not appropriate (e.g. Canadian respondents found some questions inapplicable to municipal accounting in their country); the coding 8 means the respondent had no opinion and states that, while the coding 9 means the question was misunderstood.

Table 8
Frequency Count, Mean, Standard Deviation, and Standard Error for Each Question for Each Group Sampled

QUESTION #1 (NIC)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	21	9	7	0	1	0	0	1	1.71	.956
(standard error)											(.155)
UNDERWRITERS & IB	0	26	9	3	0	0	0	0	2	1.39	.638
											(.104)
CPAs	0	27	13	5	0	0	0	1	0	1.51	.695
											(.104)
FINANCE OFFICERS	0	26	4	1	0	0	0	0	0	1.19	.477
											(.086)
QUESTION #2 (NIC)											
NCGA & OTHERS	1	13	16	8	0	0	0	0	1	1.86	.751
											(.124)
UNDERWRITERS & IB	0	13	21	3	0	0	1	0	2	1.73	.608
											(.100)
CPAs	0	10	15	18	0	0	1	1	1	2.19	.794
											(.121)
FINANCE OFFICERS	0	8	19	1	1	0	2	0	0	1.83	.658
											(.122)

Table 8 - continued

QUESTION #3 (NIC)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	5	8	5	9	10	0	0	2	3.30	1.43 (.235)
UNDERWRITERS & IB	0	3	6	4	10	13	2	0	2	3.67	1.35 (.225)
CPAs	0	3	8	9	20	4	0	1	1	3.32	1.10 (.165)
FINANCE OFFICERS	0	2	5	5	9	7	2	0	1	3.5	1.262 (.238)
QUESTION #4 (NIC)											
NCGA & OTHERS	0	7	16	5	6	4	0	0	1	2.58	1.27 (.205)
UNDERWRITERS & IB	0	12	6	7	5	5	2	0	3	2.57	1.46 (.247)
CPAs	0	10	15	6	10	4	0	1	0	2.62	1.30 (.194)
FINANCE OFFICERS	0	4	10	3	6	5	3	0	0	2.93	1.39 (.262)
QUESTION #5 (NIC)											
NCGA & OTHERS	0	1	13	24	0	0	0	0	1	2.61	.55 (.089)
UNDERWRITERS & IB	0	7	15	13	1	0	1	0	3	2.22	.80 (.133)
CPAs	0	9	16	18	0	0	2	1	0	2.21	.77 (.118)
FINANCE OFFICERS	0	9	9	12	1	0	0	0	0	2.16	.90 (.161)
QUESTION #6 (NIC)											
NCGA & OTHERS	0	5	6	16	1	1	8	0	2	2.55	.95 (.176)
UNDERWRITERS & IB	0	11	7	10	1	2	6	0	3	2.23	1.18 (.211)
CPAs	0	11	8	22	2	0	2	1	0	2.35	.92 (.141)
FINANCE OFFICERS	0	10	6	11	0	0	3	0	1	2.04	.90 (.173)
QUESTION #7 (NIC)											
NCGA & OTHERS	0	4	12	19	1	0	2	0	1	2.47	.736 (.123)
UNDERWRITERS	0	9	13	13	0	0	1	0	4	2.11	.796 (.135)
CPAs	0	1	25	19	0	0	0	1	0	2.40	.539 (.080)
FINANCE OFFICERS	0	0	13	18	0	0	0	0	0	2.58	.502 (.090)

Table 8 - continued

QUESTION #8 (NIC)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	3	8	20	1	1	4	0	2	2.67	.816 (.142)
UNDERWRITERS	0	10	10	9	3	2	3	0	3	2.32	1.17 (.201)
CPAs	0	6	18	19	0	0	2	1	0	2.30	.71 (.108)
FINANCE OFFICERS	0	4	9	10	0	3	5	0	0	2.58	1.14 (.223)
QUESTION #9 (NIC)											
NCGA & OTHERS	0	11	15	12	0	0	0	0	1	2.03	.79 (.128)
UNDERWRITERS & IB	0	11	19	5	0	0	2	0	3	1.83	.664 (.112)
CPAs	0	14	23	6	1	0	1	1	0	1.86	.734 (.111)
FINANCE OFFICERS	0	13	13	5	0	0	0	0	0	1.74	.729 (.131)
QUESTION #10 (NIC)											
NCGA & OTHERS	1	0	4	22	0	0	10	0	2	2.85	.368 (.072)
UNDERWRITERS & IB	0	0	2	26	1	0	8	0	3	2.97	.325 (.060)
CPAs	0	0	7	30	0	0	8	1	0	2.81	.397 (.065)
FINANCE OFFICERS	0	2	4	20	0	0	4	0	1	2.69	.618 (.121)
QUESTION #11 (NIC)											
NCGA & OTHERS	0	8	14	12	0	0	4	0	1	2.12	.769 (.132)
UNDERWRITERS & IB	0	19	13	5	0	0	0	0	3	1.62	.721 (.118)
CPAs	0	3	28	13	0	0	1	1	0	2.23	.565 (.085)
FINANCE OFFICERS	0	11	12	8	0	0	0	0	0	1.90	.790 (.142)
QUESTION #12 (NIC)											
NCGA & OTHERS	2	9	8	4	1	0	11	1	3	1.86	.889 (.190)
UNDERWRITERS & IB	0	20	6	4	1	1	1	0	7	1.66	1.04 (.183)
CPAs	0	14	13	6	0	0	10	2	1	1.76	.751 (.131)
FINANCE OFFICERS	0	12	9	6	0	0	4	0	0	1.78	.801 (.154)

Table 8 - continued

QUESTION #13 (NIC)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	2	12	22	1	0	1	0	1	2.59	.644 (.106)
UNDERWRITERS & IB	0	4	15	16	0	0	1	0	4	2.34	.684 (.116)
CPAs	0	3	22	17	1	0	2	1	0	2.372	.655 (.100)
FINANCE OFFICERS	0	10	12	9	0	0	0	0	0	1.968	.795 (.143)
QUESTION #14 (NIC)											
NCGA & OTHERS	2	15	8	8	0	0	4	0	2	1.77	.845 (.152)
UNDERWRITERS & IB	0	25	6	3	0	0	1	0	5	1.35	.646 (.111)
CPAs	0	16	9	17	0	0	2	1	1	2.02	.897 (.138)
FINANCE OFFICERS	0	17	9	5	0	0	0	0	0	1.61	.761 (.137)
QUESTION #15 (NIC)											
NCGA & OTHERS	1	0	6	27	3	1	0	0	1	2.97	.600 (.099)
UNDERWRITERS & IB	0	1	11	17	2	0	5	0	4	2.65	.661 (.119)
CPAs	0	0	4	32	8	1	0	1	0	3.13	.588 (.088)
FINANCE OFFICERS	0	0	6	20	3	1	1	0	0	2.97	.669 (.122)
QUESTION #16 (NIC)											
NCGA & OTHERS	2	6	3	26	1	0	0	0	1	2.61	.803 (.134)
UNDERWRITERS & IB	0	3	13	21	0	0	0	0	3	2.49	.651 (.107)
CPAs	0	3	9	32	1	0	0	1	0	2.69	.633 (.094)
FINANCE OFFICERS	0	2	2	26	0	0	1	0	0	2.80	.551 (.101)
QUESTION #17 (NIC)											
NCGA & OTHERS	0	1	13	23	0	0	0	0	2	2.59	.551 (.091)
UNDERWRITERS & IB	0	8	15	13	1	0	0	0	3	2.19	.811 (.113)
CPAs	0	7	21	15	0	0	2	1	0	2.186	.699 (.107)
FINANCE OFFICERS	0	6	10	15	0	0	0	0	0	2.29	.783 (.141)

Table 8 - continued

QUESTION #1 (BR)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	23	6	7	0	2	0	0	1	1.74	1.11 (.180)
UNDERWRITERS & IB	0	31	4	3	0	1	0	0	1	1.36	.843 (.135)
CPAs	0	29	12	3	0	1	0	1	0	1.49	.815 (.122)
FINANCE OFFICERS	0	27	1	0	0	3	0	0	0	1.42	1.21 (.216)
QUESTION #2 (BR)											
NCGA & OTHERS	1	15	10	11	1	0	0	0	1	1.95	.911 (.150)
UNDERWRITERS & IB	0	15	17	5	0	1	1	0	1	1.82	.865 (.140)
CPAs	0	9	14	18	1	1	1	1	1	2.33	.919 (.140)
FINANCE OFFICERS	0	8	15	4	2	0	2	0	0	2.0	.845 (.157)
QUESTION #3 (BR)											
NCGA & OTHERS	0	4	7	4	8	12	2	0	2	3.49	1.44 (.244)
UNDERWRITERS & IB	0	5	6	3	8	15	2	0	1	3.59	1.5 (.246)
CPAs	0	2	7	5	25	5	0	1	1	3.55	1.04 (.157)
FINANCE OFFICERS	0	3	5	1	10	9	2	0	1	3.61	1.40 (.264)
QUESTION #4 (BR)											
NCGA & OTHERS	0	7	15	3	7	5	1	0	1	2.68	1.36 (.223)
UNDERWRITERS & IB	0	10	8	5	6	6	3	0	2	2.71	1.49 (.251)
CPAs	0	12	13	5	11	3	0	2	0	2.55	1.32 (.199)
FINANCE OFFICERS	0	4	10	1	5	8	3	0	0	3.11	1.52 (.288)
QUESTION #5 (BR)											
NCGA & OTHERS	0	2	14	22	0	0	0	0	1	2.53	.603 (.098)
UNDERWRITERS & IB	0	9	11	14	1	0	2	0	3	2.2	.868 (.147)
CPAs	0	10	16	17	0	0	2	1	0	2.16	.785 (.120)
FINANCE OFFICERS	0	8	9	13	1	0	0	0	0	2.23	.884 (.159)

Table 8 - continued

QUESTION #6 (BR)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	6	5	14	2	0	9	0	3	2.44	.934 (.180)
UNDERWRITERS & IB	0	10	7	11	1	1	8	0	2	2.2	1.06 (.194)
CPAs	0	10	7	23	2	0	2	2	0	2.4	.912 (.141)
FINANCE OFFICERS	0	9	8	9	0	0	4	0	1	2.0	.849 (.166)
QUESTION #7 (BR)											
NCGA & OTHERS	0	6	11	15	1	1	4	0	1	2.41	.925 (.159)
UNDERWRITERS & IB	0	12	11	10	1	0	2	0	4	2.0	.888 (.152)
CPAs	0	4	25	16	0	0	0	1	0	2.27	.618 (.092)
FINANCE OFFICERS	0	3	11	16	0	1	0	0	0	2.52	.811 (.146)
QUESTION #8 (BR)											
NCGA & OTHERS	0	2	4	20	2	2	7	0	2	2.93	.868 (.159)
UNDERWRITERS & IB	0	8	10	12	2	2	4	0	2	2.41	1.10 (.189)
CPAs	0	10	16	17	0	0	2	1	0	2.16	.785 (.120)
FINANCE OFFICERS	0	2	8	13	0	3	5	0	0	2.77	1.03 (.202)
QUESTION #9 (BR)											
NCGA & OTHERS	0	10	20	8	0	0	0	0	1	1.95	.695 (.113)
UNDERWRITERS & IB	0	15	13	5	0	0	4	0	3	1.70	.728 (.127)
CPAs	0	18	21	4	1	0	1	1	0	1.73	.727 (.110)
FINANCE OFFICERS	0	19	8	3	1	0	0	0	0	1.55	.810 (.145)
QUESTION #10 (BR)											
NCGA & OTHERS	1	0	3	23	0	0	10	0	2	2.88	.326 (.064)
UNDERWRITERS & IB	0	0	3	23	1	0	10	0	3	2.93	.385 (.074)
CPAs	0	0	6	31	0	0	8	1	0	2.84	.374 (.061)
FINANCE OFFICERS	0	2	6	18	0	0	4	0	1	2.62	.637 (.125)

Table 8 - continued

QUESTION #11 (BR)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	9	11	12	0	1	5	0	1	2.18	.950 (.165)
UNDERWRITERS & IB	0	21	15	2	0	0	0	0	2	1.5	.604 (.098)
CPAs	0	7	25	12	0	0	1	1	0	2.11	.655 (.099)
FINANCE OFFICERS	0	11	15	5	0	0	0	0	0	1.81	.703 (.126)
QUESTION #12 (BR)											
NCGA & OTHERS	2	7	9	5	0	0	11	1	4	1.90	.768 (.168)
UNDERWRITERS & IB	0	13	6	12	1	0	1	0	7	2.03	.967 (.171)
CPAs	0	13	13	6	0	0	11	2	1	1.78	.751 (.133)
FINANCE OFFICERS	0	10	7	10	0	0	4	0	0	2.0	.877 (.169)
QUESTION #13 (BR)											
NCGA & OTHERS	0	2	15	19	1	1	0	0	1	2.51	.651 (.107)
UNDERWRITERS & IB	0	2	20	12	0	0	2	0	4	2.29	.579 (.099)
CPAs	0	6	19	16	1	0	3	1	0	2.29	.742 (.114)
FINANCE OFFICERS	0	12	12	7	0	0	0	0	0	1.84	.779 (.14)
QUESTION #14 (BR)											
NCGA & OTHERS	2	16	11	4	0	0	4	0	2	1.61	.715 (.128)
UNDERWRITERS & IB	0	28	5	2	0	0	1	0	4	1.26	.561 (.095)
CPAs	0	21	9	12	0	0	2	1	1	1.79	.871 (.134)
FINANCE OFFICERS	0	16	11	3	1	0	0	0	0	1.65	.798 (.143)
QUESTION #15 (BR)											
NCGA & OTHERS	1	1	5	22	5	2	1	0	2	3.06	.802 (.136)
UNDERWRITERS & IB	0	2	10	16	3	0	6	0	3	2.65	.755 (.136)
CPAs	0	0	6	31	8	0	0	1	0	3.04	.562 (.084)
FINANCE OFFICERS	0	0	6	19	4	1	1	0	0	3.0	.695 (.127)

Table 8 - continued

QUESTION #16 (BR)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	2	5	6	23	1	1	0	0	1	2.64	.867 (.144)
UNDERWRITERS & IB	0	3	13	21	0	0	0	0	3	2.49	.651 (.107)
CPAs	0	3	10	30	1	0	0	2	0	2.66	.645 (.097)
FINANCE OFFICERS	0	1	3	26	0	0	1	0	0	2.83	.461 (.084)
QUESTION #17 (BR)											
NCGA & OTHERS	0	1	15	18	0	1	2	0	2	2.57	.698 (.118)
UNDERWRITERS & IB	0	10	14	12	1	0	1	0	2	2.11	.843 (.139)
CPAs	0	7	19	16	0	0	2	2	0	2.21	.717 (.111)
FINANCE OFFICERS	0	6	11	13	1	0	0	0	0	2.29	.824 (.148)
PART II.											
QUESTION #1											
NCGA & OTHERS	0	12	17	8	0	2	0	0	0	2.08	.984 (.158)
UNDERWRITERS & IB	0	11	23	4	1	0	1	0	0	1.87	.695 (.11)
CPAs	0	15	19	3	7	2	0	0	0	2.17	1.18 (.174)
FINANCE OFFICERS	0	13	15	2	1	0	0	0	0	1.71	.74 (.133)
QUESTION #2 (II)											
NCGA & OTHERS	0	0	5	7	15	6	6	0	0	3.7	.951 (.166)
UNDERWRITERS & IB	0	4	8	6	18	3	0	0	1	3.21	1.17 (.188)
CPAs	0	2	4	5	26	9	0	0	0	3.78	1.01 (.149)
FINANCE OFFICERS	0	1	6	3	10	11	0	0	0	3.77	1.23 (.22)
QUESTION #3 (II)											
NCGA & OTHERS	0	0	1	2	8	21	7	0	0	4.47	.879 (.155)
UNDERWRITERS & IB	0	2	3	5	18	11	1	0	0	3.85	1.09 (.174)
CPAs	0	1	1	4	25	11	3	0	1	4.05	.825 (.127)
FINANCE OFFICERS	0	0	2	1	9	19	0	0	0	4.45	.85 (.153)

Table 8 - continued

QUESTION #4 (II)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	9	10	3	9	7	1	0	0	2.79	1.46 (.236)
UNDERWRITERS & IB	0	11	12	5	2	10	0	0	0	2.70	1.56 (.246)
CPAs	0	15	16	4	6	3	2	0	0	2.23	1.26 (.189)
FINANCE OFFICERS	0	7	14	2	5	3	0	0	0	2.45	1.29 (.231)
QUESTION #5 (II)											
NCGA & OTHERS	0	1	12	6	10	1	9	0	0	2.93	1.02 (.185)
UNDERWRITERS & IB	0	4	21	2	6	3	2	0	2	2.53	1.16 (.193)
CPAs	0	4	16	5	13	3	5	0	0	2.88	1.19 (.185)
FINANCE OFFICERS	0	1	7	3	11	7	2	0	0	3.55	1.21 (.225)
QUESTION #6 (II)											
NCGA & OTHERS	0	18	14	3	1	0	2	0	1	1.67	.756 (.126)
UNDERWRITERS & IB	0	11	14	4	1	0	10	0	0	1.83	.791 (.145)
CPAs	0	25	15	2	2	0	1	0	1	1.57	.789 (.119)
FINANCE OFFICERS	0	8	19	1	1	0	2	0	0	1.83	.658 (.122)
QUESTION #7 (II)											
NCGA & OTHERS	0	4	5	4	11	9	6	0	0	3.45	1.35 (.235)
UNDERWRITERS & IB	0	0	2	9	12	8	9	0	0	3.84	.898 (.161)
CPAs	0	0	2	5	7	24	7	0	1	4.39	.916 (.149)
FINANCE OFFICERS	0	0	1	4	13	5	8	0	0	3.96	.767 (.160)
QUESTION #8 (II)											
NCGA & OTHERS	0	4	5	4	11	9	6	0	0	2.58	1.37 (.222)
UNDERWRITERS & IB	0	5	11	5	8	6	5	0	0	2.97	1.36 (.230)
CPAs	0	6	17	5	7	10	1	0	0	2.96	1.41 (.211)
FINANCE OFFICERS	0	2	11	4	9	3	2	0	0	3.0	1.12 (.22)

Table 8 - continued

QUESTION #9 (II)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	2	26	5	1	4	1	0	0	2.45	1.03 (.167)
UNDERWRITERS & IB	0	6	15	6	2	0	10	0	1	2.14	.833 (.155)
CPAs	0	15	21	4	2	1	3	0	0	1.91	.92 (.14)
FINANCE OFFICERS	0	0	20	4	1	0	6	0	0	2.24	.523 (.105)
QUESTION #10 (II)											
NCGA & OTHERS	0	4	14	5	8	5	3	0	0	2.89	1.282 (.214)
UNDERWRITERS & IB	0	1	4	7	8	5	13	0	2	3.48	1.12 (.224)
CPAs	0	0	11	3	16	14	2	0	0	3.75	1.16 (.175)
FINANCE OFFICERS	0	1	8	3	12	2	4	0	1	3.23	1.11 (.217)
QUESTION #11 (II)											
NCGA & OTHERS	0	1	11	7	8	1	11	0	0	2.96	.999 (1.89)
UNDERWRITERS & IB	0	8	18	4	6	2	1	0	1	2.37	1.15 (.186)
CPAs	0	4	24	7	4	3	4	0	0	2.48	1.04 (.161)
FINANCE OFFICERS	0	0	10	3	12	3	3	0	0	3.29	1.08 (.205)
QUESTION #12 (II)											
NCGA & OTHERS	0	1	24	7	1	2	4	0	0	2.4	.847 (.143)
UNDERWRITERS & IB	0	8	21	6	1	0	3	0	1	2.0	.717 (.120)
CPAs	0	9	25	2	5	1	3	0	1	2.14	.977 (.151)
FINANCE OFFICERS	0	3	20	1	4	0	3	0	0	2.21	.833 (.157)
QUESTION #13 (II)											
NCGA & OTHERS	0	8	24	4	2	0	1	0	0	2.0	.725 (.116)
UNDERWRITERS & IB	0	11	19	5	3	0	2	0	0	2.0	.870 (.141)
CPAs	0	7	30	3	2	1	2	0	1	2.07	.799 (.122)
FINANCE OFFICERS	0	7	20	2	2	0	0	0	0	1.97	.752 (.135)

Table 8 - continued

	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
QUESTION #14 (II)											
NCGA & OTHERS	0	0	1	7	5	4	22	0	0	3.72	.895 (.211)
UNDERWRITERS & IB	0	0	5	7	9	6	11	0	2	3.59	1.05 (.202)
CPAs	0	0	3	12	8	4	19	0	0	3.48	.893 (.172)
FINANCE OFFICERS	0	0	2	6	9	1	13	0	0	3.5	.786 (.185)
QUESTION #15 (II)											
NCGA & OTHERS	0	1	2	6	15	2	13	0	0	3.54	.859 (.169)
UNDERWRITERS & IB	0	1	5	9	11	6	7	0	1	3.50	1.078 (.191)
CPAs	0	1	7	9	17	5	7	0	0	3.46	1.02 (.164)
FINANCE OFFICERS	0	0	4	3	17	3	4	0	0	3.70	.869 (.167)
QUESTION #16 (II)											
NCGA & OTHERS	0	3	13	6	13	2	2	0	0	2.95	1.13 (.186)
UNDERWRITERS & IB	0	0	8	9	11	11	1	0	0	3.64	1.11 (.178)
CPAs	0	5	20	6	10	2	3	0	0	2.63	1.11 (.170)
FINANCE OFFICERS	0	5	16	0	9	1	0	0	0	2.52	1.18 (.212)
QUESTION #17 (II)											
NCGA & OTHERS	0	2	17	6	5	2	6	0	1	2.69	1.06 (.19)
UNDERWRITERS & IB	0	1	7	5	12	7	7	0	1	3.53	1.16 (.206)
CPAs	0	4	19	5	9	4	5	0	0	2.76	1.2 (.187)
FINANCE OFFICERS	0	2	10	4	9	5	1	0	0	3.17	1.26 (.23)
QUESTION #18 (II)											
NCGA & OTHERS	0	0	3	7	7	3	19	0	0	3.600	.883 (.197)
UNDERWRITERS & IB	0	1	5	4	8	11	11	0	0	3.79	1.24 (.229)
CPAs	0	1	9	10	11	2	13	0	0	3.12	.992 (.173)
FINANCE OFFICERS	0	0	0	6	15	3	6	0	1	3.88	.612 (.125)

Table 8 - continued

QUESTION #19 (II)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	2	13	6	10	0	8	0	0	2.84	1.00 (.180)
UNDERWRITERS & IB	0	7	19	4	5	2	1	0	2	2.35	1.11 (.183)
CPAs	0	4	14	9	10	3	6	0	0	2.85	1.145 (.181)
FINANCE OFFICERS	0	1	8	5	11	3	3	0	0	3.25	1.11 (.210)
QUESTION #20 (II)											
NCGA & OTHERS	0	2	4	11	8	5	9	0	0	3.3	1.149 (.210)
UNDERWRITERS & IB	0	4	12	6	5	0	12	0	1	2.44	.974 (.187)
CPAs	0	6	12	10	5	1	11	0	1	2.5	1.052 (.180)
FINANCE OFFICERS	0	1	8	5	11	3	3	0	0	3.25	1.11 (.210)
QUESTION #21 (II)											
NCGA & OTHERS	0	17	10	4	4	3	1	0	0	2.11	1.31 (.213)
UNDERWRITERS & IB	0	11	13	2	4	7	3	0	0	2.54	1.50 (.247)
CPAs	0	14	17	1	6	6	1	0	1	2.39	1.418 (.214)
FINANCE OFFICERS	0	10	9	1	7	4	0	0	0	2.55	1.48 (.266)
QUESTION #22 (II)											
NCGA & OTHERS	1	2	13	4	9	4	6	0	0	3.06	1.22 (.215)
UNDERWRITERS & IB	0	1	9	5	10	13	2	0	0	3.66	1.26 (.204)
CPAs	0	8	26	3	5	2	2	0	0	2.25	1.04 (.156)
FINANCE OFFICERS	0	2	18	2	6	2	1	0	0	2.6	1.102 (.201)
QUESTION #23 (II)											
NCGA & OTHERS	0	1	4	6	17	7	4	0	0	3.686	.993 (.168)
UNDERWRITERS & IB	0	0	7	5	14	6	8	0	0	3.59	1.04 (.184)
CPAs	0	1	8	6	20	10	1	0	0	3.67	1.09 (.162)
FINANCE OFFICERS	0	1	5	3	20	2	0	0	0	3.55	.961 (.173)

Table 8 - continued

QUESTION #24 (II)	0	1	2	3	4	5	6	8	9	MEAN	Standard Deviation
NCGA & OTHERS	0	3	14	7	9	0	6	0	0	2.61	.966 (.168)
UNDERWRITERS & IB	0	4	16	5	9	2	3	0	1	2.69	1.14 (.190)
CPAs	0	3	18	6	9	2	8	0	0	2.71	1.09 (.177)
FINANCE OFFICERS	0	2	15	4	8	0	2	0	0	2.62	.979 (.182)
QUESTION #25 (II)											
NCGA & OTHERS	0	0	2	9	13	4	10	0	1	3.643	.780 (.147)
UNDERWRITERS & IB	0	0	5	5	16	7	6	0	1	3.76	.97 (.169)
CPAs	0	1	3	11	19	4	8	0	0	3.58	.889 (.144)
FINANCE OFFICERS	0	0	4	3	23	1	0	0	0	3.68	.748 (.134)
QUESTION #26 (II)											
NCGA & OTHERS	0	2	16	6	7	4	4	0	0	2.89	1.17 (.194)
UNDERWRITERS & IB	0	2	16	12	4	1	4	0	1	2.6	.881 (.149)
CPAs	0	6	19	9	8	2	2	0	0	2.568	1.087 (.164)
FINANCE OFFICERS	0	1	7	6	14	3	0	0	0	3.35	1.050 (.189)

Note: The mean, standard deviation, and standard error are calculated with the 0, 6, 8, and 9 scores deleted.

There were t-tests run per question between groups. An F-test at a .10 level of significance was the cut-off per question for utilizing the pooled-variance estimate (greater than .10) or the separate variance estimate (less than or equal to .10). Those questions demonstrating a difference in groups at a .20 level of significance are reported in Table 9.

Table 9
The t-values for Questions Demonstrating a Difference Between Groups Surveyed

QUESTION #		Comment on Nature of Question	t-value	df	Probability
CPAs Compared with Finance Officers					
1	(NIC)	audit vs. no audit	2.36	74	.021
2	(NIC)	auditor general vs. no audit	2.01	70	.049
6	(NIC)	ownership of public utility	1.39	68	.169
7	(NIC)	special reports by CPAs	-1.48	74	.144
11	(NIC)	other experts (national)	1.96	50.9	.056
13	(NIC)	MFOA Certification	2.39	72	.019
14	(NIC)	legal structure	2.06	71	.043
2	(BR)	auditor general vs. no audit	1.52	70	.132
4	(BR)	qualified vs. no opinion	-1.66	70	.102
6	(BR)	ownership of public utility	1.83	66	.072
7	(BR)	special reports by CPAs	-1.45	53	.154
8	(BR)	comfort letter	-2.76	67	.007
10	(BR)	National Alliance member	1.60	37	.119
11	(BR)	other experts (national)	1.94	73	.056
13	(BR)	MFOA Certification	2.49	71	.015
16	(BR)	both state and indep. audit	-1.35	71.8	.180
PART II of Questionnaire					
1		internal control report use	2.12	74.7	.037
3		IB approval of auditor	-2.04	71	.045
5		bond raters use auditor	-2.32	68	.023
6		CPAs increasing business	-1.46	71	.147
7		state auditors timely	1.92	59	.060
9		state auditors--compliance	-1.90	66	.062
10		similar qualifications	1.84	68	.071
11		underwriters use auditors	-3.13	68	.003
17		frequent transfers	-1.39	68	.168
18		raters encourage transfers	-3.54	53.8	.001
19		IB use auditors (get info.)	-1.44	66	.156
20		audit proceeds exceed cost	-2.73	60	.008
22		revenue default lowers rate	-1.39	72	.169
26		selection of independent CPA	-3.13	73	.003

INTERPRETATION: Finance Officers identify a more favorable impact on the bond rating and net interest cost for 2, 6, 11, 13. Finance Officers identify a less favorable impact upon bond rating and net interest cost for 7. Finance Officers identify a more favorable impact on net interest cost of 1, 14. Finance Officers identify no impact on bond rating of a qualified opinion while CPAs perceive a favorable impact, i.e. 4. Finance Officers identify a less favorable impact on bond rating for 8, 16. Finance Officers identify a more favorable impact on bond rating for 10. Regarding Part II of the questionnaire, Finance Officers

Table 9 - continued

agree more on the impact in 1, 26. Finance Officers agree to a lesser degree on 6, 9, 22 (being more neutral regarding 22). Finance Officers disagree to a greater extent on 3, 5, and 18. Finance Officers disagree to a lesser extent on 7 and 10. Finance Officers disagree on 11 while CPAs agree. Finance Officers are neutral to disagree on 17 while CPAs agree (approaching neutrality). Finance Officers are neutral to disagree on 19 while CPAs agree (approaching neutrality). Finance Officers are neutral to disagree on 20 while CPAs agree to neutral.

CPAs COMPARED WITH UNDERWRITERS & IB				
2 (NIC)	auditor general vs. no audit	-2.85	78	.006
7 (NIC)	special reports by CPAs	-1.82	57	.074
10 (NIC)	National Alliance member	1.70	64	.094
11 (NIC)	other experts (national)	-4.24	79	.000
14 (NIC)	legal structure	-3.78	73.1	.000
15 (NIC)	GAAFR except by statute	-3.38	74	.001
16 (NIC)	both state and indep. audit	-1.42	80	.159
2 (BR)	auditor general vs. no audit	-2.56	79	.012
7 (BR)	special reports by CPAs	-1.50	56	.140
11 (BR)	other experts (national)	-4.39	80	.000
14 (BR)	legal structure	-3.22	70.8	.002
15 (BR)	GAAFR except by statute	-2.50	52.12	.015
PART II of Questionnaire				
1	internal control report use	-1.46	74.59	.148
2	IB requires national auditor	-2.44	83	.017
4	deficit impacts audit effect	1.54	82	.128
5	bond raters use auditor	-1.31	75	.195
6	CPAs increasing business	1.42	72	.161
7	state auditors timely	-2.53	67	.014
16	revenue bonds more risky	4.12	80	.000
17	frequent transfers	2.78	71	.007
18	raters encourage transfers	2.37	60	.021
19	IB use auditors (get Info.)	-1.94	75	.057
22	revenue default lowers rate	5.55	80	.000

INTERPRETATION: Investment Bankers and Underwriters (IB) identify a more favorable impact on the bond rating and net interest cost for 2, 7, 11, and 14, IB identify a less favorable impact on net interest cost for 10. IB identify a more favorable impact on net interest cost for 16. IB agree (approaching neutrality) concerning 15 while CPAs are neutral, approaching disagree. Regarding Part II of the questionnaire, IB agree to a greater extent on 1, 5, 19. IB agree to a lesser extent on 4 and 6. IB disagree less on 2 and 7. IB disagree more on 18. IB do not agree on 16 while CPAs agree. IB disagree on 17 while CPAs agree. IB disagree on 22 while CPAs agree.

Table 9 - continued

CPAs COMPARED WITH NCGA AND OTHERS					
2	(NIC)	auditor general vs. no audit	1.85	78	.068
5	(NIC)	"Big 8" vs. regional or local	-2.68	76	.009
8	(NIC)	comfort letter	-2.08	74	.041
13	(NIC)	MFOA Certification	-1.53	78	.131
17	(NIC)	national auditor vs. regional	-2.87	78	.005
2	(BR)	auditor general vs. no audit	1.85	78	.068
5	(BR)	"Big 8" vs. regional or local	-2.31	79	.023
8	(BR)	comfort letter	-3.95	71	.000
9	(BR)	GAAFR Conformance	-1.39	80	.167
13	(BR)	MFOA Certification	-1.44	77	.153
17	(BR)	national auditor vs. regional	-2.20	75	.031
PART II of Questionnaire					
3		IB approval of auditor	-2.11	72	.038
4		deficit impacts audit effect	-1.88	80	.064
7		state auditors timely	3.38	55	.001
9		state auditors--compliance	-2.49	79	.015
10		similar qualifications	3.14	78	.002
11		underwriters use auditors	-1.95	68	.055
18		raters encourage transfers	-1.77	51	.082
20		audit proceeds exceed cost	-2.91	62	.005
22		revenue default lowers rate	-3.13	74	.002

INTERPRETATION: NCGA and others (NCGA) identify a more favorable impact on the bond rating and net interest cost for 2. NCGA identify a less favorable impact on the bond rating and net interest cost for 5, 8, 13, and 17. NCGA identify a less favorable impact on bond rating for 9. Regarding Part II of the questionnaire, NCGA agree less on 4, 9, and 11. NCGA disagree less on 3 and 7 (7 approaching neutrality). NCGA disagree more on 18. NCGA agree more on 10 while CPAs are neutral approaching disagree. NCGA are neutral approaching disagree on 20 while CPAs agree approaching neutrality. NCGA are neutral approaching disagree on 22 while CPAs agree.

UNDERWRITERS AND INVESTMENT BANKERS COMPARED WITH NCGA AND OTHERS					
1	(NIC)	audit vs. no audit	-1.69	65	.095
5	(NIC)	"Big 8" vs. regional or local	-2.40	62	.020
7	(NIC)	special reports by CPAs	-1.97	69	.053
8	(NIC)	comfort letter	-1.39	59	.169
11	(NIC)	other experts (national)	-2.80	69	.007
13	(NIC)	MFOA Certification	-1.61	70	.112
14	(NIC)	legal structure	-2.27	63	.027
15	(NIC)	GAAFR except by statute	-2.14	66	.036
17	(NIC)	national auditor vs. regional	-2.52	63	.014

Table 9 - continued

1	(BR)	audit vs. no audit	-1.68	69	.097
5	(BR)	"Big 8" vs. regional or local	-1.85	60	.069
7	(BR)	special reports by CPAs	-1.87	66	.066
8	(BR)	comfort letter	-2.08	62	.042
9	(BR)	GAAFR Conformance	-1.48	69	.143
11	(BR)	other experts (national)	-3.55	53	.001
13	(BR)	MFOA Certification	-1.50	69	.139
14	(BR)	legal structure	-2.26	64	.027
15	(BR)	GAAFR except by statute	-2.14	64	.036
16	(BR)	both state and indep. audit	- .85	65	.400
17	(BR)	national auditor vs. regional	-2.53	70	.014
PART II of Questionnaire					
2		IB requires national auditor	-1.93	70	.058
3		IB approval of auditor	-2.61	69	.011
5		bond raters use auditor	-1.50	64	.139
7		state auditors timely	1.35	56	.183
9		state auditors--compliance	-1.32	65	.192
10		similar qualifications	1.86	59	.068
11		underwriters use auditors	-2.2	64	.032
12		effect on counties vs. cities	-2.15	69	.035
16		revenue bonds more risky	2.70	74	.009
17		frequent transfers	3.03	62	.004
19		IB use auditors (get info.)	-1.88	66	.064
20		audit proceeds exceed cost	-3.01	55	.004
21		audit required by SEC	1.34	73	.185
22		revenue default lowers rate	2.00	68	.049

INTERPRETATION: NCGA and others (NCGA) identify a less favorable impact on the bond rating and net interest cost for 1, 5, 7, 8, 11, 13, 14, 15, 17 (15 approaches neutrality). NCGA identify a less favorable impact on the bond rating for 9 and 16. Regarding Part II of the questionnaire, NCGA agree more on 21. NCGA agree less on 5, 9, 11, 12, and 19. NCGA disagree more on 2 and 3. NCGA disagree less on 7 and 22. NCGA agree on 10 while underwriters and investment bankers (IB) disagree. NCGA agree on 16 while IB disagree. NCGA agree on 17 while IB disagree. NCGA disagree on 20 while IB agree.

NCGA AND OTHERS COMPARED WITH FINANCE OFFICERS

1	(NIC)	audit vs. no audit	2.92	57	.005
5	(NIC)	"Big 8" vs. regional or local	2.41	47	.020
6	(NIC)	ownership of public utility	2.08	54	.042
9	(NIC)	GAAFR Conformance	1.54	67	.128
13	(NIC)	MFOA Certification	3.59	66	.001
17	(NIC)	national auditor vs. regional	1.82	53	.075
5	(BR)	"Big 8" vs. regional or local	1.61	51	.113
6	(BR)	ownership of public utility	1.81	51	.076
9	(BR)	GAAFR Conformance	2.20	67	.031

Table 9 - continued

10 (BR)	National Alliance member	1.92	37	.063
11 (BR)	other experts (national)	1.80	59	.076
13 (BR)	MFOA Certification	3.89	66	.000
17 (BR)	national auditor vs. regional	1.50	64	.139
PART II of Questionnaire				
1	internal control report use	1.73	68	.089
5	bond raters use auditor	-2.13	57	.038
7	state auditors timely	-1.77	52	.083
8	need both auditors	-1.32	65	.192
16	revenue bonds more risky	1.53	66	.13
17	frequent transfers	-1.62	60	.110
19	IB use auditors (get info.)	-1.50	57	.140
21	audit required by SEC	-1.32	67	.192
22	revenue default lowers rate	1.57	60	.123
26	selection of independent CPA	-1.71	65	.093

INTERPRETATION: Finance Officers (FO) identify a more favorable impact on the bond rating and net interest cost for 5, 6, 9, 13, and 17. FO identify a less favorable impact on net interest cost for 1. FO identify a more favorable impact on net interest cost for 10 and 11. Regarding Part II of the questionnaire, FO agree more on 1 and 16. FO agree less on 21. FO disagree more with 7. FO disagree with 5 while NCGA agree. FO is neutral on 8 while NCGA agree. FO disagree with 17 while NCGA agree. FO disagree with 19 while NCGA agree. FO agree with 22 while NCGA are neutral (approaching disagree). FO disagree with 26 while NCGA agree.

UNDERWRITERS AND INVESTMENT BANKERS COMPARED WITH FINANCE OFFICERS

1 (NIC)	audit vs. no audit	1.45	67	.151
7 (NIC)	special reports by CPAs	-2.88	58	.006
10 (NIC)	National Alliance member	2.02	37	.051
11 (NIC)	other experts (national)	-1.54	66	.129
13 (NIC)	MFOA Certification	2.06	64	.043
14 (NIC)	legal structure	-1.49	63	.141
15 (NIC)	GAAFR except by statute	-1.89	59	.064
16 (NIC)	both state and indep. audit	-2.10	65	.040
7 (BR)	special reports by CPAs	-2.44	63	.018
10 (BR)	National Alliance member	2.14	41	.039
11 (BR)	other experts (national)	-1.95	67	.056
13 (BR)	MFOA Certification	2.66	55	.010
14 (BR)	legal structure	-2.26	53	.028
15 (BR)	GAAFR except by statute	-1.91	59	.061
16 (BR)	both state and indep. audit	-2.55	64	.013
PART II of Questionnaire				
2	IB requires national auditor	-1.97	68	.053
3	IB approval of auditor	-2.54	68	.013

Table 9 - continued

5	bond raters use auditor	-3.47	63	.001
11	underwriters use auditors	-3.28	64	.002
16	revenue bonds more risky	4.09	68	.000
19	IB use auditors (get info.)	-3.23	63	.002
20	audit proceeds exceed cost	-2.86	53	.006
22	revenue default lowers rate	3.63	66	.001
26	selection of independent CPA	-3.17	64	.002

INTERPRETATION: Finance Officers (FO) identify a more favorable impact on the bond rating and net interest cost for 10. FO identify a less favorable impact on the bond rating and net interest cost for 7, 11, 13, 14, 15, and 16. FO identify a more favorable impact on net interest cost for 1. Regarding Part II of the questionnaire, FO disagree more on 2 and 3. FO disagree while underwriters and investment bankers (IB) agree on 5, 11, 19, 20, 26. FO agree while IB disagree on 16 and 22.

Since a normality assumption underlies the t-test, the Kolmogorov-Smirnoff test for normality was applied to each question for the total number of cases (156) and the K-S z ranged from 1.9969 to 5.3127 resulting in significance for the 2-tailed p of .0007 to 0. In addition to this lack of normality, it is evident that the data involved are at an ordinal level of measurement, and that several of the questions in the questionnaire overlap, relating to one underlying idea.

Due to the relation of numerous questions to one key idea, for example the issue of national reputation is addressed in questions 5, 11, and 17 pertaining to net interest cost and bond rating and questions 2, 15, 23, and 25 in Part II, a reasonable methodology was to run a factor analysis on the questions for the total cases, after deleting the 0, 6, 8, and 9 values.

Twenty-one factors were formed. Table 10 presents the twenty-one factors with labels assigned to each factor suggesting the nature of the questions loading. In general the questions loading in excess of .5 are listed (or the highest loading for that factor), as well as those loading for that factor with intuitive arguments for being grouped with the question having the highest loading.

Table 10
Factors Formed From the Questionnaire Data

Factor	Label	Questions Loading	Eigenvalue	Percent of Total Variation Explained
1	National Reputation and Information from Auditor	NIC: 5, 17 BR: 5, 7, 11, 17 II: 2, 15, 23, 25	6.12	10.2
2	Presence of Audit	NIC: 1, 2, 4 BR: 4	4.1	6.8
3	Type of Opinion, Legal Structure, Other Experts, and Approval Over Auditor	NIC: 3, 11, 14 BR: 3, 14 II: 3	3.6	6.0
4	State Auditor Value and Comfort Letter	NIC: 2, 8	3.42	5.7
5	MFOA and Obtaining Information from the Auditor	NIC: 13 BR: 13 II: 11, 19	3.21	5.3
6	Conformity with GAAFR: Ownership of a Public Utility	NIC: 6 BR: 6, 9	2.62	4.4
7	State Auditor Qualifications and Incremental Value: Nonconformance with GAAFR Due to Statute	NIC: 15 BR: 16 II: 7, 10	2.59	4.3

Table 10 - continued

8	Insurance; Risk of Issue, i.e. revenue versus general obligation bonds; Internal Control Report; Information from Auditor	NIC: 16 BR: 12 II: 1	2.21	3.7
9	National Alliance; Legal Structure and Conformity with GAAFR; Timeliness of State Auditor	NIC: 10, 14 BR: 9 II: 7	2.07	3.5
10	Type of Qualification; Frequency of Transfers	II: 13, 17	1.86	3.1
11	CPAs Want to Increase Municipal Clients	II: 6	1.83	3.1
12	Value of Audit and Bids With "Big 8" Auditor	BR: 16 II: 20, 25	1.77	3.0
13	State Auditor's Role and Internal Control Reports; MFOA Certificate of Conformance	BR: 13 II: 1, 9	1.63	2.7
14	Audit Selection and Audit Value for Bond Rating; Special Report Value for Bond Rating	BR: 1, 7, 9 II: 26	1.58	2.6
15	Audit by Both Independent and State Auditors	NIC: 16	1.5	2.5
16	Mandatory Audit; State Audit Value; Deficit Effect on Audit Value	NIC: 2 II: 4, 21	1.37	2.3
17	Value of Audit; Legal Structure	II: 20, 24	1.32	2.2
18	Legal Structure	BR: 14	1.23	2.0
19	Comfort Letter	BR: 8	1.20	2.0
20	Internal Control Report	II:1	1.13	1.9

Table 10 - continued

21	Deficit Impact on Auditee	II: 4	1.0	1.7
				78.9

Note: NIC represents the first 17 questions on the questionnaire pertaining to net interest cost, while the BR represents those same 17 questions with respect to bond rating. II refers to Part II of the questionnaire. It should be noted that no questions are listed with a loading less than .28.

The key purpose for running the factor analysis was to capture the key ideas to which several of the original questions related. Since related questions (highly correlated questions) did load on the same factor it appears more efficient to run the analysis on the twenty-one factor scores per respondent than on the original questions (note that all factors with an associated eigenvalue of less than 1.0 were deleted). With 78.9% of the original variance explained by the twenty-one factors, and the clear prevalence of factor concepts which relate to the questions identified in Table 9 as differentiating between groups in the t-test analysis of the individual questions, it would appear that very little information is lost in applying this methodology. An advantage of utilizing the factor scores in the analysis is that they meet the requirement of normality. The Kolmogorov-Smirnoff test was run on all 156 cases (4 were deleted due to missing data) and the K-S z ranged from .3475 to 1.0382 giving 2-tailed p significance from .9997 to .2313. As additional support for utilizing t-test of the factor scores, a Kolmogorov-Smirnoff test was run on the factor scores of

each group to be analyzed. The NCGA and others group has as its minimum 2-tailed p value a .2630; the finance officers group's lowest 2-tailed p was .5302. The CPAs' lowest 2-tailed p value was .3812, and the underwriters' and investment bankers' lowest 2-tailed p value was .4226. Most p values were in the .7 to .9 range. With this support for the underlying normality of the factor scores, t-tests were run on the factor scores utilizing the same cut-off for the variance estimation, i.e. if an F-test at a .10 level of significance or greater was computed a pooled variance estimate was utilized. If the F-test was below the .10 level a separate variance estimate was utilized. Table 11 reports those factors indicating a difference in groups at the .10 level.

Table 11
The t-values for Factors Demonstrating a Difference Between Groups Surveyed

Factor	COMMENT ON NATURE OF FACTOR	t-value	df	Probability
CPAs COMPARED WITH FINANCE OFFICERS				
2	Presence of Audit	2.01	74	.048
4	State Audit Value and Comfort Letter	-1.81	74	.074
5	MFOA and Obtaining Information	2.51	74	.014
6	Conformity with GAAFR	-1.94	74	.056
7	State Auditor Qualifications	2.44	74	.017
20	Internal Control Report	2.04	74	.045
CPAs COMPARED WITH UNDERWRITERS AND INVESTMENT BANKERS				
1	National Reputation	-2.65	81	.010
2	Presence of Audit	-2.42	81	.018
4	State Audit Value	2.89	81	.005
7	State Auditor Qualifications	-2.96	81	.004
8	Insurance	-2.34	67	.022
20	Internal Control Report	-2.87	81	.005

Table 11 - continued

CPAs COMPARED WITH NCGA AND OTHERS				
7	State Auditor Qualifications	4.79	81	.000
17	Value of Audit; Legal Structure	2.86	81	.005
UNDERWRITERS AND INVESTMENT BANKERS COMPARED WITH NCGA AND OTHERS				
1	National Reputation	-2.11	74	.038
2	Presence of Audit	-1.74	74	.086
4	State Audit Value	2.04	69	.045
6	Conformity with GAAFR	2.00	74	.049
8	Insurance	-3.18	74	.002
17	Value of Audit; Legal Structure	2.51	74	.014
UNDERWRITERS AND INVESTMENT BANKERS COMPARED WITH FINANCE OFFICERS				
1	National Reputation	-3.37	67	.001
5	MFOA and Obtaining Information	3.20	67	.002
8	Insurance	-1.78	67	.080
12	Value of Audit and Bids "Big 8"	-2.78	67	.007
NCGA AND OTHERS COMPARED WITH FINANCE OFFICERS				
5	MFOA and Obtaining Information	3.45	67	.001
6	Conformity with GAAFR	-2.42	67	.018
7	State Auditor Qualifications	-2.35	67	.022
12	Value of Audit and Bids "Big 8"	-2.47	62	.016

It appears these findings reported in Table 11 (noting the restraining of significance to .10 for reporting as compared with the .20 significance level utilized for reporting in Table 9) substantially agree with those obtained by applying the t-tests to the original questions, despite the normality problems with the raw data per question.

However, the issue of the ordinal level of measurement still needs to be addressed. The methodology applied was to compute a Mann-Whitney test on a subset of raw data questions. As an example of how close the results were, for Question 2,

comparing CPAs and underwriters and investment bankers, significance is reported in Table 9 at .006; the Mann-Whitney test results follow:

	COUNT	MEAN RANK	
CPAs	43	46.6	U = 534.5
UNDERWRITERS	37	37	z = -2.7046
			2-tailed p = .0068

The same type of support for the t-test results was obtained by running Mann-Whitney on factor scores, e.g. none of the factor scores for Factors 3 or 19 (the lowest 2-tailed p level on the Kolmogorov-Smirnoff test of individual questions) were significant on either the t-test or the Mann-Whitney analysis. Based on these results it is believed the t-tests on the raw data and factor scores are not significantly affected by the ordinal level of measurement.

The final issue to be addressed is the demographic characteristics of the sample. Table 12 summarizes experience, size of business, level of position, and education data per group. A t-test analysis was run on the total experience and the education level of the various groups. The results are presented in Table 13.

It appears that significant differences in experience exist, except between underwriters and NCGA and others, and that significant differences exist in the education of underwriters versus NCGA, NCGA versus Finance Officers, and CPAs versus NCGA. These differences would be expected due to the young age of CPA

Table 12
Demographic Data on Questionnaire Respondents

GROUP		TOTAL EXPERIENCE	EXPERIENCE IN CURRENT POSITION	LEVEL OF POSITION	EDUCATION LEVEL
CPAs	MEAN	9.1556	-	3.76	2.244
	STANDARD DEV.	9.143		.484	.679
FINANCE OFFICER		22.14	8.04	-	2.129
		8.105	5.681		.718
UNDERWRITERS		16.08	6.029	2.57	2.31
		11.661	7.274	1.461	.893
NCGA		15.4	8.25	2.09	3.297
		9.58	7.52	1.489	1.53

GROUP	SIZE OF BUSINESS	PERCENT OF BUSINESS THAT IS MUNICIPAL
CPAs	3.2857	9.647
	1.419	10.328
UNDERWRITERS	-	57.31
		35.996

Note: The unit of measure for total experience is 1 = less than 3 years, 2 = 3 to 5 years, 3 = 5 to 10 years, and values of 10 and above represent years. The unit of measure for experience in current position is years. The unit of measure for level of position for the CPA is 3 = manager and 4 = partner. The unit of measure for level of position for groups other than CPAs is a scale from 1 to 7 with 1 = top management. The unit of measure for the education level is 2 = Bachelor's Degree, 3 = Master's Degree, 4= advanced accounting degree, 5 = Juris Doctor. The unit of measure for the size of business is 3 = under $500,000 and 4 = $500,000 to $1,000,000.

Table 13
The t-values for Demographic Questions on Experience and Education

Group	t-value	df	Probability
UNDERWRITERS COMPARED WITH NCGA			
Total Experience	.17	47	.866
Education	-3.47	74	.001
UNDERWRITERS COMPARED WITH CPAs			
Total Experience	3.05	82	.003
Education	.37	82	.714
NCGA COMPARED WITH FINANCE OFFICERS			
Total Experience	-2.16	37	.037
Education	4.14	53.12	.000
CPAs COMPARED WITH NCGA			
Total Experience	-1.94	53	.058
Education	-3.89	47.67	.000
CPAs COMPARED WITH FINANCE OFFICERS			
Total Experience	-6.23	72	.000
Education	.71	74	.479
UNDERWRITERS COMPARED WITH FINANCE OFFICERS			
Total Experience	-2.53	66	.014
Education	.90	68	.369

firm partners, on average (however, the difference may well be magnified due to the unequal interval scale for which CPA responses could have frequently involved a 1, 2, or 3 coding), and inclusion of lawyers with NCGA which would increase the education level of that group when compared with the other respondents. The statistics in Table 12 appear to be reasonable attributes in the sense that one would expect these characteristics in any similar sample of these professional groups taken from other states. The college major of the finance and CPA groups tended to be finance and accounting, while the NCGA and underwriter and

investment banker groups had varied majors including such fields as English, chemistry, sociology, secondary education, government, and, of course, business. Certifications held by members of the sample include CPA, MFOA member, National Accounting Association, American Accounting Association, American Institute of Certified Public Accountants, National Council on Governmental Accounting, Certified Management Accountant, Certified Data Processing Certificate Holder, Certified Internal Auditor, National Intergovernmental Audit Force, and Chartered Accountants were represented from Canada. While the majority of respondents were from Florida or Texas, the sample included numerous other states (primarily New York and then those states represented by the National Council on Governmental Accounting), and some Canadians.

The sample of thirty-nine finance officers included five who had "Big 8" experience with municipal experience and one "Big 8" employee without prior municipal experience. In addition nine others had experience with other than a "Big 15" firm, including municipal experience, and one had worked for other than a "Big 15" with no experience in municipalities. Twelve of the respondents had industry experience, including retail sales, management consulting, and cost accounting positions. None of the sample had worked for the auditor general; however, nineteen of the sample did have some other past government employment, including budgeting and accounting, internal

auditing and systems analysis, school board director, school district chief accountant, manager of the municipal electric utility, and armed forces accounting positions. Five respondents acknowledged that their current employer became aware of their skills for their current position from contact as an outside auditor. Twenty-five municipal directors and six county finance directors are represented in the sample.

There does not appear to be any reason to question the representativeness of the sample of respondents from the group included in the questionnaire distribution. Potential biases concerning "Big 8" and government oriented questions due to past employment experience would appear to be typical for the groups sampled. These statistics do, however, provide a basis with which future researchers can compare to assess the ability to generalize interview and questionnaire results obtained for other samples.

A final remark is warranted concerning comments made by respondents to the questionnaire. Several requested a copy of the results of the study, further supporting their interest in the area. The most common comments were that the type of qualification was very important and that SEC regulation was not desirable, although state regulation requiring audits would be desirable. There were comments made concerning the political impact of municipalities on the audit and a possible distinction between private and government employees. Some respondents took time to write elongated response to the questionnaire

concerning areas of interest and often enclosing relevant articles. There was a clear difference in opinion concerning the preferability of a "Big 8" audit and the importance of an audit according to GAAFR and GAAS in contrast to a focus on the indenture agreement.

There was some indication that certain terminology on the questionnaire was unfamiliar to some respondents. The presence of the comments overall suggests a high level of interest and controversy in the subject matter investigated by the questionnaire.

One remaining point needs to be stressed concerning analysis of the results. Since the CPA and finance officer members of the NCGA were reclassified into their professional groups, the majority of the NCGA is a government-employed group; therefore, tendencies to favor the state auditor, to try to minimize the timeliness issue, and to see a clear need for both the independent and state auditor can be understood.

CHAPTER VII
EMPIRICAL STATISTICAL ANALYSIS

To evaluate the impact of accounting variables upon net interest cost and municipal bond rating, data on all general obligation municipal bonds and utility revenue bonds issued in Florida for 1974 (23 issues), 1975 (34 issues), and 1976 51 issues) were collected. Thirty-nine municipalities, fourteen counties, and two school boards are represented in the data base (however, two 1974 issues were eliminated from the analysis due to insufficient data).

Only one state was included in the sample largely due to the limited availability of auditors' (state and independent private practice) reports and financial reports. Travel to state capitals is the only feasible way to obtain such data, and travel to several such capitals would be prohibitively expensive.

Also, restriction of the sample to a single state is an implicit control against difficult-to-measure state specific conditions that affect net interest cost and bond rating. Members of the investment community are quick to point out that legal conditions within each state make each state's bonds unique. Also, supply conditions, state income tax laws and state

bank pledging requirements across states and theoretically influence the net interest cost.

The focus is on new bond issues primarily because the research interest is on the impact of reporting and auditing variables on the cost of debt to the municipality. This cost is determined when the bonds are initially issued. Also, the focus on new issues avoids problems caused by rating change lags in the market.

Selection of Finance and Demographic Variables

Fortunately, a substantial body of research exists on the determinants of net interest cost and bond ratings for individual state and local governments on their new long-term bond issues. Based on the previous studies cited in the literature review and the hypotheses formulated concerning accounting variables, data was collected on each of the variables listed in Table 14. In addition, other information pertinent to other studies in the municipal bond area was gathered.

Table 14
Variables Investigated

DEMOGRAPHIC VARIABLES	FINANCE VARIABLES	ACCOUNTING VARIABLES
Last Census/Previous Census e.g. 1974/1970[a]	Net Interest Cost	Type of Audit Report[d]
		7 = Clean Opinion
	Market Index:	6 = Consistency
Property Taxes[b]	Bond Buyer's for	5 = Depreciation
	Week Prior to Issue	4 = Litigation
Total Collections[b]		3 = Narrow Scope
	Prime Rate[c]	2 = Narrow Opinion
Assessed Value Per Capita[b]	(Day of Issue)	(type of qualification)

Table 14 - continued

Number of Building Permits[a]	Bond Rating (Standard & Poor's and Moody's on a scale with AAA=1 and BA1=9)	Independent CPA[d]
Money Income Per Capita[a]	Issue Size (log)	State CPA[d]
Exempt/Nonexempt Property Ratio[b]	Year-to-last-maturity	"Big 8" CPA[d]
% Government Employment (% of income and % of laborers)[a]	Call Feature (years-to-first call)	"Big 15" CPA[d]
Unemployment Rate[a]	Type of Offering Competitive reoffered/ not reoffered Negotiated reoffered/ not reoffered Private Placement	Date of Audit Report[d]
Public School Enrollment[a]	Spread	Dollar Impact of Audit Qualification[d] (% of total Balance Sheet and account involved)
	Number of Bids	% of total Balance Sheet funds that lack complete conformance with GAAFR[d] ($ in incorrect fund and % of fund the error represents)
	Reoffering Yield keyed to Average Maturity	MFOA Certificate of Conformance with its date[e]
	Type Issuer (County or Municipality)	Surplus or Deficit in General Fund[d]
	Type Issue (Revenue or General Obligation	CPA mentioned on front cover of the official statement[f]
	Outstanding Debt (log)[b]	Audit Report and Financial Statements in the Official Statement[f]
	Total Revenue Minus Total Expense (1 = negative value)[b]	Presence of Special Report by Auditor ("Big 8 or 15")
	Total Net Bonded Debt/ Full Value of Taxable Property[b]	Metcalf Report on "Big 8"[g]
	Florida Turnpike Yield-to-Maturity for Week Prior to Issue and Week of Issue[c]	
	MBIA Insurance Coverage	

Table 14 - continued

Notes: [a]Florida Statistical Abstract 1975, 1976, 1977

[b]State of Florida Local Government Financial Report Fiscal Year 1973-1974, 1974-1975, 1975-1976

[c]The Money Manager/ Weekly Bond Buyer, "Municipal Dollar Bonds" Supplied by Clifford Drake & Co., Inc. and "Money Market Rates In the Week"

[d]Annual Financial Reports and State Auditor General Reports

[e]Certificate of Conformance Municipal Officers Association Company Listing and annual reports

[f]Official Statements

[g]The Accounting Establishment, A Staff Study, Prepared by the Subcommittee on Reports, Accounting, and Management of the Committee on Government Operations, U.S. Senate, 95th Congress, 1st Session (March 31, 1977), Document #95-34.

In addition to specific references provided in Table 14, sources are available to supply the other information listed and Moody's Municipal and Government Manual (1975 through 1977) was also utilized to a limited extent.

The primary interest of this study is the impact of the accounting variables upon net interest cost and bond rating. However, finance and demographic variables are included in the models because of their theoretical and observed explanatory power.

As a first step, regressions utilizing previous researchers' models were run on Florida municipal bonds. Table 15 presents

the basic fitted models and the equivalent model based on similar measures fitted on the data from the Florida sample. In several cases, similar but not identical variables were used in the model fitted on the data from Florida.

Table 15
Comparison of Previous Researchers' Models and
Findings With Florida Municipal Bond Data Regression Results

Golaszewski (1977)
Net Interest Cost (NIC) = 1291 + -.03 (20 Bond Index week of issue in basis points x 100) + 6.897 (20 Bond Index for the week prior to issue in basis points x 100) - .016 amount in millions + 32.59 average maturity in years + 771 callable dummy variable - 1181 dummy AAA rating - 874 AA dummy - 392 A dummy + .06 length of issue in years - 158 external/internal audit dummy
SAMPLE: 80 Pennsylvania municipalities and counties 1974-1977
R^2 = 62%

FLORIDA DATA
NIC = -.449 + .946 Bond Buyer's Market Index for Week Prior to Issue - .000003 issue size + .025 average maturity + .198 call (dummy variable) - .0161 rating + .0089 year-to-last-maturity
SAMPLE: 67 issues from Florida data set
R^2 = 59.5%

NIC = 1604 (20 Bond Index in Basis Points Week of Issue x 100) - .014 amount of issue + 43 average maturity + 807 callable dummy variable - 2.5 percent uncollected taxes, year prior x 1000 - 5.0 median family income in hundreds - 404 external audit (dummy variable) - 5.0 assessed valuation divided by population + .8 direct debt divided by population
SAMPLE: 80 Pennsylvania municipalities and counties 1974-1977
R^2 = 61%

FLORIDA DATA
NIC = -.827 + 1.04 Bond Buyer's Index for Week Prior to Issue - .000005 issue size + .0249 average maturity + .311 call + .00383 total collections + .022 money income per capita -.0215 assessed value per capita - .00153 outstanding debt
SAMPLE: 59 issues from Florida data set
R^2 = 63.1%

Table 15 - continued

Hastie (1972)
Municipal Bond Yield (basis points per annum compounded semiannually after capital gains taxes) = 277.8 + 6.11 overall debt/true value + 10.49 defaults + 8.499 diversification - .48 college students - 12.8 log of block size + .397 net debt + .275 population change
SAMPLE: All noncallable general obligation bonds listed in the Blue List with maturities between 15 and 25 years with no more than five quotations from a single issuer in any one regression.
R^2 = 74.7% for 1967 (However, R^2 changes for different years as follows: .240 for 1960; .272 for 1965; .550 for 1963; .596 for 1957)

FLORIDA DATA
NIC = 11.30 + .014 outstanding debt (No parallel to default variable) + 2.56 percent of government employment (in money) - .969 public school enrollment - .151 log of issue size -53.98 net bonded debt divided by fair value of property -3.18 last census/previous census.
SAMPLE: 22 issues from Florida data set.
R^2 = .55715

Carleton and Lerner (1969)
Discriminant functions for five Rating Groups

	Coefficients	
	Function I	Function II
School District	-.322	.325
Debt/Assessed Value	-.36	-.613
Debt/Population	0	0
log of population	.665	-.501
log of debt	0	0
Average Collection Rate	.593	.556
Eigenvalues as percent of trace of $W^{-1}A$	.83	.16

Sample: 2 random samples from the 1967 Moody's Municipal Bond. 1 = 500 and 2 = 200 municipalities (the 200 sample was the hold-out sample from across the United States).
SUCCESSFUL PREDICTIONS OCCUR IN OVER 50% OF THE OBSERVATIONS.

FLORIDA DATA
Bond Rating = 8.10 - 68.9 net bonded debt divided by assessed value - 7.35 last census/previous census + 4.74 log of outstanding debt + .029 total collections + 5.93 percent government employment (in \$) - .01078 public school enrollment (Note that the last two variables are intended to parallel debt/ population and the stability idea of collections.)
SAMPLE: 22 issues from the Florida data set
R^2 = .4598

Table 15 - continued

Kidwell and Hendershott (1977)
NIC = -2.146 + .055 log of issue size - .042 number of bids + 1.067 interest rate level + .739 log-to-final-maturity (years) + .292 revenue bond dummy + .161 call provision dummy - .391 rating AAA - .296 rating AA - .139 A - .056 non-rated
SAMPLE: All long-term serial bond issues (except Public Housing Authority Bonds) sold competitively in the State of Indiana during the period 1970 through 1974 (389 issues).
$R^2 = .843$

FLORIDA DATA
NIC = 7.08 - .018 log of issue size - .0869 number of bids + .014 prime rate - .338 log-to-last-maturity - .195 (Revenue = 0 and General Obligation = 1) Dummy Variable for type of issue + .182 call dummy - .0074 rating
SAMPLE: 87 from the Florida data set
$R^2 = .072$

Note: Differences in Florida sample sizes are caused by missing information.

From examination of Table 15 it is evident that Golaszewski's findings are quite similar to a subset of the sample under study. The signs of the coefficients for each variable are the same (making adjustment for obvious measurement differences, e.g. total collections contrasted with uncollected taxes would be expected to bear the opposite signs) except for income. Also, the R^2 is comparable for the Florida and Golaszewski equations.

In comparing the other studies, two points need to be made. First the samples differ in obvious ways; several of the other studies limited the sample to certain types of issues (including this study's focus on Florida issues) or restricted the features

of an issue (for example, including noncallable bonds only). There is a geographical and timing distinction between the samples and a size difference with respect to the number of issues studied. Second, since the studies involve different dependent variables (Hastie, 1972) and slightly different independent variables, the results should be expected to differ. With these reservations in mind, comparison can be made between the signs of the coefficients in the past models and those examined for Florida.

Several steps were followed to settle upon the set of finance models and demographic variables included in this study of reporting and auditing variables. First, certain plausible variables could not be used because of the paucity of data on these variables. For example, some data were available only in the official statements and few such official statements were accessible. Furthermore, with a Florida sample, numerous small cities, towns, and villages were included in the sample for which detailed demographic data were unavailable. Secondly, where multiple measures of a single variable exist (including transformations of a variable utilized in a past finance study) a stepwise least squares regression technique was utilized and the first variable form to load was selected for the model, with alternative measures of the variable eliminated from further study. As a check on the stepwise selection procedure (since multicollinearity existed in submitted variables), regressions were run utilizing

those variables discarded. In this final step it was ascertained that the R^2 of the selected model was superior.

The following models were adopted. The b's are reported as absolute values and the sign describes the hypothesized direction of their relationship with the dependent variable. It should, however, be noted that there is a high level of dispute among professionals on the impact of revenue versus general obligation issues upon net interest cost and bond rating and little theory is available to suggest which direction the county versus municipality coding should impact net interest cost and bond rating. The primary basis for expecting counties (coded zero) to draw a lower interest cost is the greater size and population element normally represented by a county in contrast to a municipality. Support for the hypothesized direction of the remaining relationships is provided in Chapters II, III, and IV.

$$\text{Net Interest Cost} = b_0 + b_1X_I + b_2X_R + b_3X_Y + b_4X_T + b_5X_S + b_6X_C + b_7X_P - b_8X_B - b_9X_M$$

$$\text{Bond Rating (1 is the highest rating)} = b_0 - b_1X_L - b_2X_M + b_3X_U - b_4X_V - b_5X_F + b_6X_D + b_7X_Y + b_8X_A$$

where X_I = Bond Buyer's Index of 20 Municipal Bonds

X_R = Moody's and Standard & Poor's Credit Rating

X_Y = Years-to-Last-Maturity

X_T = Total Revenue Minus Total Expense (1 = negative)

X_S = Spread

X_C = Type of Issuer, 0 = County and 1 = Municipality

X_P = Prime Rate

X_B = Number of Bids

X_M = MBIA Insurance (dummy variable, 1 = insured)

X_L = Population change ratio of last census date to previous census date

X_U = Ratio of Issue Size to Population

X_V = Revenue or General Obligation Bond (1 = General Obligation)

X_D = Log of Outstanding Debt

X_F = Florida Turnpike Yield-to-Maturity for Week Prior to Issue

X_A = Assessed Value per capita.

The presence of different variables in the net interest cost and bond rating formulas supports the need to examine both net interest cost and municipal bond rating. Before proceeding, an additional investigation of the model was performed. The correlation matrix was examined to ascertain whether a problem with multicollinearity (Maddala, 1977) should be expected. With respect to the net interest cost model, the highest correlation between independent variables is -.32821 between bids and the index variable. However, when the two stage regression is utilized, the year-to-last-maturity estimated results in a .49999 correlation with the prime rate. With respect to the bond rating model, the log of the outstanding debt is correlated with the bond rating in the amount of .44695. Most of the correlations for both

models range from zero to .2 and do not suggest a priori a problem with multicollinearity.

The model resulting from the empirical data is presented in Table 16. The model was also tested on a subsample of 73 issues which represented all new issues of municipalities as opposed to counties. This test was made primarily due to a concern over the adequacy of the dummy variable in capturing the total distinction between counties and municipalities; for example, if there is a differential impact of a deficit upon a county as contrasted to a municipality due to differences in the political environment this would not be captured by the dummy variable. The questionnaire results suggested that some respondents perceived a differential impact of accounting and audit variables on counties and municipalities which provide additional rationale for testing the subset of 73 municipal issues. The results of the test on the 73 issues for both net interest cost and bond rating are also presented in Table 16. It is clear that the models generated from the 106 issues and the 73 issue subset are very similar except for the type of issuer variable in the net interest cost formula which is understandable given a sample including only municipalities. The large increase in R^2 for the net interest cost model suggests that the model's representation of the determinants of municipality net interest cost is superior to the representation of the mixed sample's net interest cost; it is clear that the type of issuer variable in the equation is not capturing the significance of the difference

Table 16

Regression Results for the Basic Finance and Demographic Models

N = 106 issues

$$Y_n = \underset{(1.4)}{+.030} + \underset{(.174)}{.882}\,X_I - \underset{(.037)}{.052}\,X_R + \underset{(.013)}{.011}\,X_Y - \underset{(.175)}{.323}\,X_T + \underset{(.008)}{.011}\,X_S + \underset{(.203)}{.111}\,X_C + \underset{(.057)}{.105}\,X_P - \underset{(.039)}{.060}\,X_B - \underset{(.218)}{.364}\,X_M \qquad R^2 = .34424$$

N = 73 issues

$$Y_n = \underset{(.783)}{+.296} + \underset{(.098)}{.863}\,X_I - \underset{(.020)}{.072}\,X_R + \underset{(.008)}{.017}\,X_Y - \underset{(.102)}{.263}\,X_T + \underset{(.004)}{.009}\,X_S - \underset{(.410)}{.882}\,X_{SM} + \underset{(.032)}{.091}\,X_P - \underset{(.020)}{.064}\,X_B - \underset{(.120)}{.304}\,X_M \qquad R^2 = .77257$$

N = 106 issues

$$Y_r = \underset{(1.68)}{+3.15} - \underset{(.297)}{1.22}\,X_L - \underset{(.470)}{.568}\,X_M + \underset{(1.31)}{.800}\,X_U + \underset{(.449)}{.060}\,X_V - \underset{(.194)}{.275}\,X_F + \underset{(.330)}{1.64}\,X_D + \underset{(.031)}{.074}\,X_Y + \underset{(.039)}{.070}\,X_A \qquad R^2 = .37344$$

N = 73 issues

$$Y_r = \underset{(2.13)}{4.91} - \underset{(.337)}{1.19}\,X_L - \underset{(.554)}{1.45}\,X_M + \underset{(1.45)}{2.06}\,X_U + \underset{(.616)}{.51}\,X_V - \underset{(.200)}{.317}\,X_F + \underset{(.622)}{1.50}\,X_D + \underset{(.513)}{.019}\,X_Y + \underset{(.040)}{.044}\,X_A \qquad R^2 = .44600$$

Note: Variables are coded as follows: Y_n = net interest cost; Y_r and X_R = bond rating; X_I = Bond Buyer's Index; X_Y = Years-to-last-maturity; X_T = Total Revenue Minus Total Expense with negatives coded 1; X_S = spread; X_C = type of issuer, 1 is municipality and school district and 0 is county; X_{SM} = type of isser with 1 = school district and 0 = municipality; X_P = Prime Rate; the X_B = Number of Bids; X_M = MBIA insurance

The variables only applicable to the Y_r formulas include: X_L = population change; X_U = ratio of the issue size to population; X_V = type of issue with 1 being a general obligation issue; X_F = the Florida Turnpike Yield-to-Maturity for week prior to issue; X_D = log of outstanding debt; X_A = assessed value per capita.

between counties and municipalities. It would appear that an interactive effect exists, i.e. the impact of other variables depends upon the type of issuer.

It should be noted that perverse signs result in the net interest cost model for X_R and X_T. Neither of these variables is significant at the .05 level of significance. Based on this lack of significance and the number of variables in the model it is possible that the signs are fairly arbitrary. With respect to the bond rating model, X_V has a perverse sign; however, as suggested earlier the interviews of professionals indicated significant disagreement with the traditional literature which suggests that revenue bonds are more risky instruments than general obligation bonds.

Accounting Variables

The rationale for the hypotheses presented in Chapter IV suggests the accounting variables to be tested. However, since the accounting variables were being estimated for the first time, more than one measure of many of the accounting variables were coded during the data collection stage of the research effort. Hence, competing variables existed from which the accounting variables to be tested were to be drawn. Simple regression of each of the accounting variables against net interest cost was performed and those variables with the highest significance within each set of competing variables was selected to be tested.

For example, after testing special report by a CPA, special report by a "Big 8" firm, and special report by a "Big 15" firm, with significance levels of .693, .142, and .142 (the last two variables had the same value for the sample), it was determined that special report by a "Big 8" firm would be tested with the finance model. Similarly, the following accounting variables were selected to test with the net interest cost model: impact of the audit qualification in millions of dollars, "Big 15" CPA, current deficit in the ending general fund balance, special report by "Big 8" firm, dollars in incorrectly recorded fund due to noncompliance with GAAFR, and also State CPA. One interesting result of the simple regression runs was the fact that the independent CPA variable was only significant at .968, but the coefficient did bear a sign that was consistent with theory. The state CPA variable's significance level was .284 and its sign was contrary to theory suggesting that a state audit has value and would lead to decreased net interest cost. Therefore, it appears plausible that the state CPA variable is representing the audit/no audit concept discussed in Chapters II and IV. The sign of the state CPA variable may be understandable in light of the auditor general's policy of selecting candidates to audit. Due to inadequate staffing, numerous audits are waived. The result is that the candidates first selected to be audited each year are those handling significant amounts of resources, e.g. school districts, those suspected of having difficulties, or

those who have not been audited for an extended period of time. Therefore, it appears plausible that a positive relationship could exist between state CPA audit reports and net interest cost. It is also possible, as suggested earlier, that the state auditor general audit represents no audit whatsoever when the dates of audit reports released are considered. Specific examples included in the sample follow:

> Escambia County report for 9/30/75 and 9/30/76 issued 10/20/77
>
> St. Lucie County report for 9/30/75 and 9/30/76 issued 11/21/77
>
> Orange County report for 9/30/74 and 9/30/75 issued 8/23/77.

It is clear that the timeliness issue concerning state auditor reports raised in Chapter IV and supported in Chapters V and VI could very well cause the state CPA audit variable to proxy for no audit. When it is noted that counties subject to state audits typically do not also have an independent audit (only one county in the sample had an independent CPA that was not affiliated with the state auditor general office complete an audit for a year later audited by the auditor general; it should be acknowledged that the auditor general has waived audits in the past when an independent CPA has audited the county--this involves approximately three counties in the state of Florida) the plausibility of the variable representing the audit/no audit dichotomy is increased. However, anticipation of an audit (discussed in Chapter II) does warrant consideration.

In light of the fairly common two year state audits it may well be true that the anticipation effect is lost. When the fairly high turnover of management is considered, the lack of an anticipation impact by the audit increases in plausibility.

The same accounting variables selected through the net interest cost simple regression analyses were utilized for testing in the bond rating model except for the deletion of the dollars in incorrectly recorded fund due to the noncompliance with GAAFR and the substitution of the percentage of balance sheet lacking conformance, and also the addition of the variable type of audit opinion. It was believed a priori that if the type of audit opinion had an impact it would be upon bond rating. Its significance was higher than it was for the net interest cost analysis and it was incorporated into the bond rating analysis. The substitution with respect to nonconformity with GAAFR was made due to the intuitive appeal of working with comparable percentage amounts of nonconformance as opposed to dollar amounts which would not be comparable for different municipalities of unequal size.

Test of the Accounting Variables

The first step in testing the significance of the accounting variables was to determine whether the accounting variables identified as a group, contribute to the explanation of variations in net interest cost and bond ratings for the municipalities.

In considering the net interest cost model, endogenous and exogenous variables were identified and the issue of simultaneous determination (a reciprocal relationship) of any of the independent and dependent variables was addressed. It was determined that underwriters simultaneously consider the endogenous variable years-to-last-maturity and net interest cost, since the maturity date is part of the input in calculating the bid and subsequent net interest cost to the municipality. The impact of maturity on interest costs is well documented in the finance literature (Van Horne, 1970). This simultaneity suggests that ordinary least squares would be inconsistent and implies that the appropriate methodology is two-stage least squares. The model tested included the two equations that are described in Table 17. It should be recognized that the development of the hypotheses in Chapter IV supplied a priori the expected signs of the accounting variables. Specifically, dollars and percentage of balance sheet not in conformance with GAAFR, dollar amount of audit qualification, current deficit in the ending general fund balance, and "perhaps" the state CPA variable (based on the most recent analysis) would be expected to raise net interest cost (a positive sign) and lower the bond rating (a positive sign, given the coding of bond rating as 1 equal to the highest rating). In contrast, the "Big 15" CPA, the special report by a "Big 8" firm, and the type of audit opinion, if clean (7.0 coding) would be expected to lower net interest cost (a negative coefficient) and raise the bond rating (a negative coefficient).

Table 17

Regression Results for the Accounting Variables

N = 106 issues TWO-STAGE LEAST SQUARES WITH THE NET INTEREST COST BASIC FINANCE MODEL:

$$(1)\ X_{Y\,estimated} = \underset{(10.4)}{.153} + \underset{(1.26)}{.129}\, X_I + \underset{(.294)}{.237}\, X_R + \underset{(1.008)}{1.708}\, X_L + \underset{(.479)}{.522}\, X_P \qquad R^2 = .03804$$

$$(2)\ Y_n = \underset{(2.604)}{+.273} + \underset{(.098)}{.014}\, X_{Y\,estimated} + \underset{(.225)}{.850}\, X_I - \underset{(.054)}{.037}\, X_R - \underset{(.273)}{.419}\, X_T + \underset{(.011)}{.009}\, X_S + \underset{(.307)}{.241}\, X_C + \underset{(.091)}{.070}\, X_P$$

$$\underset{(.052)}{-.062}\, X_B - \underset{(.277)}{.340}\, X_M + \underset{(.0034)}{.0004}\, X_Q - \underset{(.294)}{.144}\, X_{BF} + \underset{(.406)}{.187}\, X_{CD} - \underset{(.510)}{.026}\, X_{SR} + \underset{(.006)}{.003}\, X_{NC} + \underset{(.675)}{.558}\, X_{ST}$$

$$R^2 = .37197$$

ONE-STAGE LEAST SQUARES WITH THE NET INTEREST COST BASIC FINANCE MODEL:

$$Y_n = \underset{(1.52)}{+.397} + \underset{(.183)}{.861}\, X_I - \underset{(.042)}{.038}\, X_R - \underset{(.198)}{.420}\, X_T + \underset{(.008)}{.008}\, X_S + \underset{(.251)}{.227}\, X_C + \underset{(.063)}{.074}\, X_P - \underset{(.041)}{.062}\, X_B - \underset{(.236)}{.374}\, X_M$$

$$+ \underset{(.003)}{.0002}\, X_Q - \underset{(.237)}{.141}\, X_{BF} + \underset{(.326)}{.179}\, X_{CD} - \underset{(.411)}{.034}\, X_{SR} + \underset{(.005)}{.0030}\, X_{NC} + \underset{(.551)}{.523}\, X_{ST} + \underset{(.013)}{.005}\, X_Y \qquad R^2 = .37285$$

Note: $X_{Y\ estimated}$ = year-to-last-maturity estimated as a function of exogenous variables (to insure it is asymptotically uncorrelated)

X_I = Bond Buyer's Index X_R = Bond Rating X_L = Population Ratio X_P = Prime Rate

Y_n = net interest cost X_T = total revenue minus total expense X_S = spread X_C = type of issuer X_M = MBIA X_Q = qualification of opinion X_{BF} = Big Fifteen CPA X_{CD} = current deficit

X_{SR} = Special Report by "Big 8" X_{NC} = Nonconformance with GAAFR X_{ST} = State CPA

X_Y = Year-to-last-maturity

X_T, X_S, X_C, X_B, X_M, X_Q, X_{BF}, X_{CD}, X_{SR}, X_{NC}, X_{ST} ARE ALL CONSIDERED ENDOGENOUS VARIABLES IN THE SENSE THAT THEY ARE RELATED TO OTHER DEPENDENT VARIABLES AND ARE NOT ENTIRELY PREDETERMINED.

To judge the significance of the correction by the two-stage regression approach, an ordinary least squares utilizing the years-to-last-maturity variable was also run. Except for a small change in an accounting variable (Table 17) (amount of qualification which is only significant at .945) and a higher coefficient for the estimated years-to-last-maturity variable the two formulas are substantially identical, including R^2 values and direction and size of the coefficients. Based on this comparison the rest of the analysis will be based on the one-stage net interest cost model. The preference for the one-stage methodology is due to the minimum variance characteristic of ordinary least squares and to the robustness of the ordinary least squares approach. Johnston (1972) reports on monte carlo studies that demonstrate the superiority of one-stage over two-stage for smaller samples, and although this sample size of 106 may not be able to heavily draw on the results as support for utilizing one-stage, it is clear that for the model being analyzed the two-stage least squares is not contributing significantly to the test of hypotheses. Also, based on the relative unreliability of the R^2 for two-stage regressions it appears preferable, based on the techniques for analysis of the accounting variables which follow, to analyze the net interest cost model on a one-stage basis. It should be noted that there was no theoretical reason for utilizing the two-stage methodology for bond rating. There were no variables which simultaneously affected bond rating and were affected by bond rating.

The R^2 value for the one-stage finance and demographic variable model is .34424; the R^2 value for the one-stage model including accounting variables is .37285. To test the hypothesis H_0 : R^2 for the full model = R^2 for the finance and demographic model against the alternative hypothesis of inequality the appropriate F statistic was computed (see Kmenta, 1971, p. 370), $F_{6,91}$ = .69208. Since 2.18 is the significance cut-off for 6, 120 d.f. it is clear the accounting variables do not significantly contribute to the explanation of variation in the net interest cost for the entire sample of 106 issues. The same test will now be applied to the subsample of 73 issues, i.e. only municipality issues.

Table 18 reports the results of a one-stage regression run on the 73 issues utilizing the net interest cost basic finance variables with the accounting variables added. It should be noted that the signs of special reports and nonconformance with GAAFR are perverse and that state auditor general audit as a variable was not significant enough to be included in the regression equation. The appropriate F statistic is $1.76_{5,59}$, not significant at .05 (at .05 the cut-off for 5,60 d.f. is 2.37), and suggesting that the accounting variables do not significantly contribute to the explanation of variations in net interest cost for the sample of 73 municipal issues. However, due to the exploratory nature of this study, the 73 issue model will be further analyzed.

To evaluate the bond rating models, the R^2 was computed for the finance and demographic model with the accounting

Table 18

Regression Results for the Accounting Variables

ONE-STAGE REGRESSION MODEL FOR NET INTEREST COST:
N = 73

$$Y_n = \underset{(.909)}{-.304} + \underset{(.114)}{.918}\,X_I - \underset{(.022)}{.049}\,X_R - \underset{(.114)}{.177}\,X_T$$

$$+ \underset{(.004)}{.006}\,X_S - \underset{(.405)}{1.00}\,X_{SM} + \underset{(.033)}{.109}\,X_P - \underset{(.021)}{.054}\,X_B - \underset{(.124)}{.251}\,X_M + \underset{(.002)}{.0006}\,X_Q - \underset{(.122)}{.131}\,X_{BF} + \underset{(.162)}{.378}\,X_{CD} + \underset{(.326)}{.263}\,X_{SR}$$

$$- \underset{(.004)}{.004}\,X_{NC} + \underset{(.008)}{.014}\,X_Y \qquad R^2 = .80129$$

ONE-STAGE REGRESSION, BOND RATING MODEL:
N = 106

$$Y_r = \underset{(1.67)}{3.17} - \underset{(.314)}{.880}\,X_L - \underset{(.453)}{.660}\,X_M + \underset{(1.27)}{.928}\,X_U + \underset{(.446)}{.114}\,X_V$$

$$- \underset{(.190)}{.289}\,X_F + \underset{(.377)}{1.61}\,X_D + \underset{(.032)}{.074}\,X_Y + \underset{(.041)}{.050}\,X_A - \underset{(1.10)}{.196}\,X_{ST} - \underset{(1.10)}{.474}\,X_{LC} - \underset{(.605)}{.462}\,X_{BF} - \underset{(.683)}{2.04}\,X_{CD} + \underset{(.006)}{.008}\,X_Q$$

$$+ \underset{(.879)}{2.18}\,X_{SR} - \underset{(.081)}{.0082}\,X_{TY} \qquad R^2 = .48102$$

ONE-STAGE REGRESSION, BOND RATING MODEL:
N = 73

$$Y_r = \underset{(2.29)}{3.71} - \underset{(.353)}{.927}\,X_L - \underset{(.536)}{1.31}\,X_M + \underset{(1.45)}{1.155}\,X_U + \underset{(.578)}{.534}\,X_V$$

$$- \underset{(.195)}{.329}\,X_F + \underset{(.653)}{1.479}\,X_D + \underset{(.050)}{.050}\,X_Y + \underset{(.043)}{.051}\,X_A - \underset{(1.32)}{1.14}\,X_{LC} + \underset{(.735)}{.245}\,X_{BF} - \underset{(.714)}{2.15}\,X_{CD} + \underset{(.011)}{.012}\,X_Q + \underset{(1.46)}{1.90}\,X_{SR}$$

$$+ \underset{(.149)}{.081}\,X_{TY} \qquad R^2 = .56441$$

Notes: Y_n = net interest cost; X_I = Bond Buyer's index; X_R and Y_r = bond rating; X_T = Total Revenue minus Total Expenses; X_S = spread; X_{SM} = type of issuer, 1 = school district; X_P = prime rate; X_B = number of bids; X_M = MBIA; X_Q = qualification of opinion; X_{BF} = Big Fifteen CPA; X_{CD} = current deficit; X_{SR} = special report by "Big 8"; X_{NC} = dollars not in conformance with GAAFR; X_Y = Years-to-last-maturity; X_L = population change; X_U = Issue size/population; X_V = type of issue; X_F = Florida Y-T-M; X_D = log of outstanding debt; X_A = assessed value per capita; X_{ST} = state auditor; X_{LC} = % nonconformance; X_{TY} = type of audit opinion (7 = clean opinion)

variables included. In this case, as suggested earlier, a two-stage procedure was not required since no reciprocal relationship exists a priori between the dependent variable and any independent variable.

The R^2 for the finance and demographic variables is .37344. The appropriate F statistic is $2.69_{7,91}$. Since the F statistic cut-off at .05 significance is 2.09 for 7,120 d.f., it is clear that accounting variables do significantly contribute to the explanation of variation in bond ratings for the sample of 106 issues. It should be noted, however, that the lack of conformance with GAAFR still has the wrong sign, but with significance at .668 it is likely this variable's sign is spurious. Also, the variable could be proxying for a size variable, see Table 18.

The same test is applied to the 73 issue sample regarding bond ratings and the equation is presented in Table 18. The state CPA variable is not included in the equation due to inadequate significance. It should be noted that the type of audit opinion variable has a perverse sign, which may indicate that the coding of state auditor reports on the same scale with the independent CPA reports resulted in the perverse behavior of both the simple correlation with net interest cost and the bond rating model run on the sample of 73 issues. However, at .591 significance, the sign could be spurious. The appropriate F statistic is $2.673_{6,59}$. Since the cut-off for significance at .05 for 6, 60 d.f. is 2.25, it is clear that the accounting

variables significantly contribute to the explanation of variations in bond rating for the sample of 73 municipal issues.

The second step in analyzing the accounting variables is to examine the individual contribution of each accounting variable toward explaining the variation of the dependent variable for each model for which the accounting variables as a group were determined to be significant. Therefore, the bond rating model for both the 106 and 73 issue samples will be further investigated. For exploratory purposes, the model for net interest cost for the 73 issue municipal sample will also be further analyzed.

Initially Table 19 was constructed to provide a comparison of the F-statistics and significance level for the accounting variables in each model.

Table 19

F-Statistics for the Accounting Variables

Accounting Variables	NET INTEREST COST (73) Statistic/Significance	BOND RATING (106) Statistic/Signif.	RATING (73) F / Signif.
Qualification	.062 / .805	1.82 / .180	1.37 / .246
Big Fifteen CPA	1.15 / .288	.581 / .448	.111 / .74
Deficit	5.46 / .023	8.89 / .004	9.10 / .004
Special Report	.653 / .423	6.18 / .015	1.69 / .198
Nonconformance	1.192 / .279	N / A	N / A
% Nonconformance	N / A	.186 / .668	.741 / .393
Type of Opinion	N / A	.010 / .920	.292 / .591

It is clear that the presence of a deficit has an important impact on both bond rating and net interest cost. Since financial statements are the primary source of this information, this suggests that financial statements have value in terms of contributing toward

the explanation of bond rating and net interest cost variability. The next most significant coefficient is that of Big Eight Special Reports. This provides some evidence that the reputation of a big eight firm acting in the capacity other than auditor does contribute to lower net interest cost and higher bond rating. The majority of these "special" reports were related to debt servicing and bond covenants.

The analysis of the accounting coefficients, especially the sign of the coefficients is limited due to the number of variables in the equation and the insignificance of the coefficients. As another means of identifying which variables are responsible for increased explanation, a stepwise regression was run, submitting the accounting variables, given the finance model, in the order that theory would suggest is the most important accounting variable; then an R^2 analysis was completed for each step. It should be recognized that this last set of procedures is "pushing" the empirical tests for the purpose of looking into the source of explanation of net interest cost and bond rating among the accounting variables and to offer additional tentative evidence supporting the hypotheses which perhaps can be validated through future research on different samples.

Regarding the net interest cost model on the sample of 73 municipal issues, none of the audit variables were significant enough to be entered into the stepwise regression (inclusion was determined by a F value of .01 and a tolerance of .001, i.e. proportion of variance not explained by other independent variables)--

the attempted order of entry was qualification of opinion, "Big 15" CPA, deficit in the general fund, "special report by Big 8", nonconformance with GAAFR, and the state CPA.

With respect to the 106 issue and 73 issue bond rating model, the order in which variables were entered was state CPA, type of audit opinion, lack of conformance with GAAFR, "Big 15" CPA, deficit in general fund, dollars of qualification, and special report by "Big 8." The higher F statistics for the 106 issue sample include the following: $7.99_{13,93}$ for deficit in the general fund, significant at the .01 level (the coefficient is -1.97); $6.25_{15,91}$ for a special report by a "Big 8" firm at .01 significance (the coefficient is .8789); $1.54_{10,96}$ for the type of audit opinion, not quite significant at .05 since the cut-off is 1.75 at 15,120 d.f. (the coefficient is -.101); $1.024_{11,95}$ for the lack of conformance with GAAFR, not significant with a cut-off of 1.83 at 12, 120 d.f. at .05 level of significance (the coefficient is -1.106).

This analysis indicates that deficit in the general fund, report by a big eight firm, the type of opinion issued, and the lack of conformance with GAAFR are the major contributors toward explaining the variation in bond rating for the accounting variables.

The higher F statistics for the 73 issue sample include the following: $8.9_{12,61}$ significant at .01 for the deficit in general fund variable (the coefficient is -2.13); $1.79_{11,62}$ not quite significant at .05 (1.92 is needed for $F_{12,60}$; the

coefficient is .938) "Big 15" CPA; $1.32_{10,63}$ (cutoff at 10,60 d.f. at .05 significance is 1.99; the coefficient is -1.48) for the lack of conformance with GAAFR in percentage terms; $1.56_{13,60}$ (cutoff at 12, 60 d.f. is 1.92 at .05 significance; the coefficient is .013) for the dollars of audit qualification; and $1.72_{14,59}$ (cutoff at 15, 60 d.f. is 1.84 at .05 significance; the coefficient is 1.902) for special report by a "Big 8" firm.

Support is provided for the significance of a deficit in the general fund and a special report by the "Big 8" firm in explaining the variation of bond rating.

There is some concern over the scale utilized for measuring the type of audit opinion; it very likely approaches an ordinal level of measurement. Although a loss of control for the other variables being examined is recognized, an additional test of the audit opinion was conducted utilizing a Mann-Whitney analysis. The results of this test are reported in Table 20.

Table 20
A Mann-Whitney Analysis of the Type of Audit Opinion and Its Relation to Bond Ratings

	COUNT	GROUP MEAN RANK	
Bond Rating 1, 2	12	38.8	U = 165 z = -2.2
3	46	27.1	2-tailed p = .028
Bond Rating 2	5	29.7	U = 96.5 z = -.6
3	46	25.6	2-tailed p = .548
Bond Rating 3	46	38.7	U = 681.5 z = -.09
7	30	38.2	2-tailed p = .93
Bond Rating 1,2,3	58	58.5	U = 1452 z = -.68
0,4,5,6,7,8,9	54	54.4	2-tailed p = .49
Bond Rating 1,2	12	77.0	U = 353.5 z = -2.4
0,3,4,5,6,7,8,9	100	54.0	2-tailed p = .017
Bond Rating 1	7	8.1	U = 6.5 z = -1.95
2	5	4.3	Exact p = .0732

Based on the results in Table 20, 1 qualification of an opinion does affect the top rating categories one versus two, and one and two versus three (or the rest of the categories). However, once the rating falls to the 3 level, it appears as though the type of opinion does not have an impact on bond rating. The Mann-Whitney was also run on opinion 1 versus 7 (.777 p value), 0 versus 7 (.716 p value), and 2 versus 7 (.54 p value) with respect to net interest cost. The implication is that the type of audit opinion does not impact net interest cost significantly.

A chi-square analysis of presence of an audit given a deficit resulted in a classification of 4 issues with a deficit which had no audit and 42 with a deficit for the current year having an audit. Normal expectations would be 11 not having an audit and 35 having an audit, given that the population included a total of 81 audited issues and 25 unaudited issues (unaudited by an independent CPA). The related statistic is 5.85_1 which is significant at .02 (5.41 is the critical value at one degree of freedom). The implication of this analysis is that given a current operating deficit, an issuer is more likely to have an audit. This statistic is very limited in its application since it is unclear how much of a choice the 25 unaudited issuers have in terms of choosing to have an audit. Based on auditor general staffing problems, probably the primary application of this test is that the state auditor is more likely to audit a county which has a current deficit in the general fund.

CHAPTER VIII
INTEGRATION OF RESEARCH RESULTS

As discussed in Chapter V, the purpose of applying three research approaches is to obtain validation of the research results. This chapter will integrate the findings of Chapters V, VI, and VII and evaluate the findings in relation to each of the hypotheses presented in Chapter IV.

H_1: An audit has a favorable impact on net interest cost (decreases net interest cost) and bond rating (increases bond rating).

An analysis of how the municipal bond market works suggests the plausibility of an audit impact at numerous stages in the market process. The quality of financial advisors and underwriters attracted to an issue should definitely be improved, in light of current disclosure demands by such professional groups. The general bond quality, an important consideration by underwriters, should improve in light of the lowered information risk as well as other potential benefits of the audit, delineated in Chapter II. The inclusion of disclosure demands in bids suggests the audit may impact who bids on an issue and the nature of the bid provisions. Overall it would appear that the time involved in issuing long-term securities could be shortened with improved information available to all market participants. These

potential effects of the audit are clearly supported by the comments in Table V, Chapter V.

The questionnaire results in Table 8 via questions I 1 (NIC and BR), I 2 (NIC and BR), I 4 (NIC and BR except for finance officers regarding BR), I 16 (NIC and BR), and II 21 indicate a desire for the audit and a perceived favorable impact of the audit on net interest cost and the bond rating. It is interesting to note that the order of the groups sampled in judging the impact of an audit versus no audit (from most favorable to favorable) is finance officers, underwriters and investment bankers, CPAs, and finally the NCGA and others (question #1 pertaining to NIC), with significant differences at a .05 level between CPAs and finance officers and the NCGA and others and the finance officers. Based on the factor analysis (Table 10) the presence of an audit explained 6.8% of the variation in questionnaire responses, but the more relevant point is the agreement of all groups as to its favorable impact on both net interest cost and the bond rating of a municipality. Just as the Golaszewski (1977) study suggests a value to the external/internal audit dummy variable, the Florida data analysis indicate that accounting and audit variables as a group contribute significantly to the explanation of the bond rating of both the total sample of 106 issues and the subsample of 73 municipalities. The simple regression of the independent variable representing the presence of an audit with net interest cost and then with the

bond rating indicated the "correct" sign on the coefficient, in terms of a priori expectations; however, the individual contribution of the variable or the hypothesized proxy for the audit/no audit concept (state CPA) was not determined to be significant.

It is interesting to note that the average net interest cost for the 106 issue sample was 6.541 (.988 variance), the 73 sample 6.519 (.540 variance), and the 33 issue difference was 6.589 (2.023 variance), demonstrating the hypothesized relationship holds for presence of an audit. Similarly, the hypothesized relationship holds for ratings with a mean of 4.557 (6.211 variance) for the 106 issue sample, 4.384 (6.434 variance) for the 73 issue sample, and 4.939 (5.684 variance) for the 33 (recall that 1 is the highest rating). It is also of interest that the mean net interest cost for the Florida 106 issue sample, 6.541 (.988 variance) is below the Bond Buyer's Index average of 6.632 (.339 variance). Since nationally a mix of audit practices exists, there is some suggestion that Florida's practice of auditing municipalities may have lowered the state's net interest cost relative to other states. However, the differential may well be greater than suggested by the Bond Buyer's Index since one must consider that the twenty bonds upon which the index is based may well be above average in size and disclosure policies.

H_{1a} : Audit assurance attracts more bidders, i.e. more competition, which drive net interest cost down.

Interviews with professionals and comments on the questionnaires often claimed that without an audit municipalities could not

get bids. This suggests the increased marketability of audited issues. The questionnaire II (25) statement regarding "Big 8" auditors increasing the number of bids submitted was mildly agreed with by all groups other than the finance officers. If the role of the state CPA variable representing the audit/ no audit dichotomy is acknowledged, a comparison of the X_B (bids) coefficient in the 106 and 73 issue samples of the net interest cost model suggests that the role of the number of bidders for the 73 issue sample (the audited by independent private practice CPAs sample) is slightly higher, with both models bearing the correct theoretical sign. Likewise, the elasticity of the bids variable is -.145 for 106 issues and -.194 for the 73 issue sample which indicates that bids have a greater impact per 1% change for audited municipalities than unaudited issuers. The average number of bids for the sample of 106 issues was 2.311, while the average for the 73 issue sample was 2.5616. The 33 issue difference had a mean number of bids of 1.738. The related z value is 1.08 when comparing the 73 and 106 issue samples, only significant for 2.56 exceeding 2.31 at an alpha of .15. Thus, strong statistical evidence does not exist for the number of bids increasing with an audit, however perceptions of experts and the direction of the bid variable suggest a tendency does exist for such a relationship between the audit and the number of bids submitted.

H_2: The impact of the audit is lessened if the audit opinion is qualified.

Interviews, questionnaire responses (see question II 13), and the statistical analysis indicate that the type of qualification is an important factor in assessing its impact on the net interest cost and the bond rating of municipalities. Question I 3 (NIC and BR) indicates that a qualified opinion does not have as positive an impact as a clean opinion on net interest cost and bond rating, although I 4 (NIC and BR) does support its relative value over no opinion. The importance of the type of opinion is represented by Factor 3 (Table 10) and was comparable between groups. The variable X_Q (Table 17) in the two-stage net interest cost model had the appropriate theoretical direction but was only significant at .945 (106 issue model). It also had the same directional relationship in the 73 issue sample in the rating model and the 106 issue sample. The type of opinion variable had the correct theoretical sign in the 106 issue and 73 issue net interest cost models. By itself, the variable was almost significant at the .05 level in the 106 issue sample on bond rating. The Mann-Whitney results in Table 20 indicate that the type of audit opinion impacts the bond rating in the high rating groups 1 to 3 (out of a nine point scale).

H_3 : A "Big 8" audit has a more favorable impact than an audit by other CPAs in private practice.

While interview results were mixed with some tendency toward recognizing advantages to having "Big 8" firms, the

questionnaire results indicated support for this proposition in responses to I 5 (NIC and BR) and I 17 (NIC and BR). However, responses to II 2, II 23, and II 25 limit the impact of the national status. The factor analysis factor 1 concerning national reputation was differently perceived by the CPAs and investment bankers and the NCGA, and investment bankers and finance officers, with relative rankings indicating the investment bankers were least disagreeable with respect to the idea that investment bankers require national auditors. The statistical results that a "Big 8" special report (.01 level of significance) for the 106 sample in the bond rating model indicate this variable contributes toward explaining the bond rating.

H_4 : Audits by CPAs in private practice will have a more favorable impact than audits by state auditors.

The timeliness problem with state auditors was repeatedly cited by bond raters and was supported in responses to question II 7 in the survey. The questionnaire responses also suggest that the state audit is more favorable than no audit (I 2 NIC and BR), both independent and state auditors are needed (I 16 NIC and BR) and II 8--although the responses to II 8 approach neutrality--state auditors are more concerned with legislative compliance than individual investors (II 9), and that qualifications of state and independent auditors are not perceived to be similar (II 10). Thus, despite some references to state audit reports in bond raters' publications, in general state audit reports are of limited use to most market participants primarily due to

their lack of timeliness. The state audit variable demonstrated a relationship with net interest cost contrary to theory and is hypothesized to represent the audit/ no audit dichotomy; however, the individual variable lacks significance. With respect to the bond rating, the state CPA variable demonstrates a positive impact on the bond rating for the 106 issue sample but lacks significance as an individual contribution to the explanation of either net interest cost or bond rating.

H_5 : The larger the portion of a fund "covered" by an accounting method in accordance with Governmental Accounting, Auditing, and Financial Reporting (GAAFR), the more favorable will be net interest cost and the bond rating.

Bond raters' reporting of accounting methods indicates experts' review of financial statements. Statement I 9 indicates a favorable impact on net interest cost and bond rating through GAAFR conformity. Factor 6 (Table 10) relates to the conformity of financial statements with GAAFR which, at the .05 level of significance, was perceived differently by investment bankers and the NCGA group and the NCGA and finance officer groups--the relative ranking beginning with that group which indicated that conformance with GAAFR had the greatest favorable impact on the bond rating and the net interest cost follows: finance officers, investment bankers and underwriters, CPAs, and finally the NCGA. Question I 15 implies that exceptions from GAAFR due to local and state statutes are more acceptable (except in terms of the CPAs' perception), although the replies were very close to neutral--

i.e. all exceptions have a similar impact on net interest cost and the bond rating. Conformity with GAAFR approached significance for the bond rating 106 issue model and for the bond rating 73 issue sample.

H_6 : The audit impact is greater for those municipalities with deficits in the general fund.

Deficits in the general fund are considered warning signals by bond raters and do lead to higher disclosure demands and to a more extensive investigation. Question II 4 indicated agreement with the audit being more important to deficit municipalities. The presence of a deficit variable was statistically significant for net interest cost (73 issues) at a .05 level and both of the bond rating models at a .01 level (Table 19). Also the contribution toward explaining the bond rating in both the 106 and 73 issue models was significant at .01. A chi-square analysis indicated that the state auditor is more likely to audit a county which has a current deficit in the general fund; this implies a greater use for an audit in the deficit setting.

H_7 : The audit impact is greater on revenue bonds than on general obligation bonds.

It would appear that H_7 is not supported except for some slight agreement on the questionnaire results that revenue bonds are more risky, which could imply a need for more information. As described in Chapter IV the a priori impact was presumed due to more areas being subject to an audit. Support for this

contention is provided by the common practice of requiring audits in revenue indenture agreements since 1959. Likewise, the comparability of the two issue types may suggest that the commonality of the audit of revenue bond issuers has led to a lower relative risk of revenue bonds when contrasted with general obligation bonds. However, due to the limited significance of both the presence of an audit and the state CPA variable, no hard statistical evidence of a differential audit impact is provided.

H_8 : A special report from an accountant (e.g. pertaining to the mathematical accuracy of debt service) will have a favorable impact on the net interest cost and bond rating.

The common practice of bid provisions for special reports and bond raters' comments that the use of comfort letters has grown 50% since the New York incident suggest a value of special reports. I 7 (NIC and BR) and I 8 (NIC and BR) provide support for the value of special reports and comfort letters. The special report by a "Big 8" firm variable was significant in the bond rating 106 issue model at .015 and in terms of incremental contribution to explaining the bond rating, it was significant at .01 for the 106 issue and almost significant at .05 for the 73 issue model

H_9 : The holding of a Municipal Finance Officers Association (MFOA) Certificate of Conformance has a favorable impact on net interest cost and bond rating.

Except for some slight agreement on the questionnaire results (I 13) H_9 is not supported by the research results. It should be noted, however, that a very small subset of the sample had Certificates of Conformance--only ten Florida municipalities were listed on the MFOA company listing--and this could explain the relative lack of importance of the attribute to the municipalities. Also, since MFOA Certification guarantees conformance with GAAFR, it is possible that the conformity variable absorbed the effect of the MFOA certification by serving as a partial proxy. It might be reasonable to attribute some of the significance found for the general level of conformance with GAAFR to the holding of an MFOA certificate.

In conclusion it appears that except for H_7 and H_9 the hypotheses are supported in varied degrees. The validity of the conclusion per hypothesis depends on the existence of significant results in Chapter VII, because the lack of validation by another sample forces the three research methods to assume the validating role. In general the hypotheses are supported by the interview and questionnaire results, so that the "hardness" of the evidence depends on the statistical analysis.

CHAPTER IX
POSSIBLE EXTENSIONS OF THE RESEARCH AND THE PRIMARY EXPECTED CONTRIBUTIONS OF THE STUDY

Through determination of the impact of selected financial reporting practices and the nature of the audit opinion upon interest cost and bond rating, municipal finance officers, investors, investment bankers, bond rating services, governments, and the general public have an improved basis for predicting net interest cost and bond rating, and a means of influencing these factors. Hard data have been provided as a basis for evaluating recommendations pertaining to regulation of the financial reporting of municipalities and the requirement of audits. Evidence on the value of an audit and other CPAs' services is provided. Evidence on the usefulness of an auditor in locating problem areas and in providing advice to troubled managers, the importance of properly applying GAAFR as reflected by the municipal bond market, and the value of CPAs in offering negative assurance and special reports has been provided.

It appears that a means of improving a municipality's bond rating and possibly its net interest cost is available through improving financial reporting and audit practices. The measurement of differing perceptions on determinants of net interest cost and bond ratings and important facets of the

municipal bond market allows groups to assess the optimality of past and current accounting and audit practices, the propriety of their beliefs concerning other professional groups' preferences in the reporting area, and desired future actions based on the cost/benefit dimensions clarified by the research effort. When the benefits of adequate financial reporting practices and an audit are suggested with quantification, it would appear reasonable that voluntary compliance with proposed SEC-level disclosures could be encouraged and obtained without the related cost of regulation.

Possible extensions of this study include the examination of financial reporting practices and audit opinions as they impact various stages of the bond issue, e.g. the impact on the time required for a bond issue in total and the time required to obtain a bond rating, the ease of securing a bond rating, and the impact on other measures of marketability besides the number of bids submitted. Similar studies for bond issues of other states would provide additional evidence on whether results from this research can be generalized to other states' municipal bond issuers. Of particular interest would be a three-way comparison of a state with no required audit, a state requiring audits by auditor general professional staff, and a state with audits required by independent private practice CPAs.

APPENDIX

TERMINOLOGY TO FACILITATE AN UNDERSTANDING OF THE HYPOTHESES TO BE TESTED

BIDS - Prices offered to the bond issuer by underwriters; the basic choice by the issuer is either to go competitive bidding or negotiate a deal.

CALLABLE BOND - A type of bond which permits the issuer to pay the obligation before the stated maturity date by giving notice of redemption in a manner specified in the bond contract.

GENERAL OBLIGATION - This is backed by the full faith and credit of the issuer. The issuer has pledged himself to raise funds by whatever means are required including a tax increase or sale of property, in order to honor its full faith and credit.

NET INTEREST COST - This can be derived as equivalent to the gross interest cost over the life of the bond issue less premium divided by the total number of bond years. A more preferable measure of interest cost for a serial bond is true interest cost (TIC) which considers the time value of future coupon payments. However, TIC is not available and is difficult to compute for the average investor.

OVERLAPPING DEBT - The proportionate share of the debts of noncity local governmental units located wholly or in part within the limits of the city which must be borne by the city tax base.

RATING - A bond rating is a judgment about the investment quality:

QUALITY CHARACTERISTICS	SYMBOLS Moody's	Standard & Poor's
Prime	Aaa	AAA
Excellent	Aa	AA
Upper Medium	A, A-1	A
Lower Medium	Baa, Baa-1	BBB
Marginally Speculative	Ca, C	D

Note that the hyphenated ratings are of better quality in their category.

Complete definitions of the ratings of both agencies will be found in publications of Moody's and Standard & Poor's (Petersen, 1974). Though not relevant to the sample dates examined in this study, Standard & Poor's has recently adjusted municipal and corporate bonds into the same rating scale.

REOFFERING YIELDS - Prices to investors, i.e. prices to the public from the underwriters.

REVENUE BONDS - This is a pledge of revenue from a specified income-generating facility such as a toll road or an electric power utility (and, increasingly from rentals of industrial plants). The issues are not ordinarily guaranteed, but typically a system of sinking funds and operating controls is set up to assure investors that the financial affairs of the facility will be maintained in good order and all commitments honored.

SPREAD - Difference between price paid to an issuer and the reoffering price to investors, i.e. the cost of underwriting to the issuer.

UNDERWRITERS - These parties purchase bonds and thereby assume the risk of marketability of the bonds; very few "best efforts" agreements are made in the municipal bond market. A key distinction is made between commercial banks who also invest vs. nonbank dealers.

YIELD - Commonly this refers to yield-to-maturity which is based on detailed arithmetical formulas employed in published yield tables, but which is approximated in a simpler version below (the approximation becomes less accurate for long maturities):

Bond Redemption Price	\$100.00	YIELD: $\frac{1}{2}$ (5.95/85.5 +
Purchase Price	85.50	5.95/100-1.45**)
Discount	\$ 14.50	= (.6959 + 5.95/98.55)$\frac{1}{2}$
Years-to-Maturity	10	= (.06959 + .06037)$\frac{1}{2}$
Annual Accumulation*	1.45	= .06498 or 6.50% YTM
Sum of one year's coupon	4.50	* On a premium bond
Net Income	5.95	(over 100) this would
		be amortized and subtracted

for the comparable computation, from the coupon rate.
** Also added rather than subtracted. (<u>Standard & Poor's Bond Guide</u>, 1974)

Due to the key concern of this study with financial reporting practices of municipalities, it is necessary to review the basis of accounting as required by Governmental Accounting, Auditing, and Financial Reporting (GAAFR) requirements as set by the National Committee on Governmental Accounting.

ACCRUAL BASIS: The basis of accounting under which revenue and gains are recorded when earned and all expenses and losses are recorded when incurred. The accrual basis of accounting is recommended for intragovernmental service funds and enterprise funds.

ACCRUAL BASIS WITH EXCEPTIONS: The basis of accounting under which expenditures are recorded on an accrual basis except for: (1) land, buildings, and equipment items, which are expended when purchased or when an obligation to other purchasing funds is incurred; (b) interest on long-term debt, which is expended when due in special assessment funds; (c) inventory type items, which are often considered to be related to the construction or purchase of land, buildings, or equipment and therefore expended when purchased. (2) Sources of financial resources are recognized as such when they are both measurable and available for financing budgeted expenditures during the current year. An exception to this is accrued interest on special assessments receivable which is recognized on the due date and not when measurable and available. This is recommended for capital projects funds, trust and agency funds and special assessment funds.

MODIFIED ACCRUAL BASIS: 1. The basis of accounting under which expenditures are recorded on an accrual basis except for: (a) land, buildings, and equipment, which are expended when purchased or when an obligation to other purchasing funds is incurred; (b) prepaid expenses, which are expended when incurred; (c) interest on long-term debt, which is expended when due; (d) purchase order and contract commitments, which are expended when the commitment is made (i.e., when appropriations become encumbered); and (e) inventory type items, which may be considered expenditures at the time of purchase. 2. Resource inflows are recorded when received in cash except for: (a) sources that are both measurable and available for financing budgeted expenditures during the current accounting year, and (b) material resources that are not received at the normal time of receipt. This method is recommended for the general fund, special revenue funds, and debt service funds (Coopers, 1976).

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BIOGRAPHICAL SKETCH

Wanda Ann Wallace was born at Kindley A.F.B., Bermuda, on August 19, 1953. Upon completion of a Bachelor of Business Administration in Accounting at Texas Christian University in August of 1972, she joined the audit staff of Arthur Andersen & Co. On November 3, 1972, she married James Joseph Wallace. After working in public accounting with Arthur Andersen & Co. and Ernst & Ernst, Wanda returned to school to further her education. She received a Master of Professional Accountancy from Texas Christian University in May of 1974. She was employed as an instructor at the University of Texas at Arlington, Texas Christian University, and Tarrant County Junior College. In 1976 she began her pursuit of a Doctor of Philosophy at the University of Florida with an accounting major, a finance minor, and a research skill in statistics. She has had her CPA certificate since June 28, 1974, and among other honors has received the Ernst & Ernst Doctoral Dissertation Award, the American Accounting Association Fellowship Award, and was the University of Florida representative at the American Accounting Association Doctoral Consortium in 1977. She plans to pursue a career in teaching and research at the university level.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Emmett Daniel Smith

Emmett Daniel Smith, Chairman
Associate Professor of Accounting

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Department of Accounting in the College of Business Administration and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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